Offshore
& GULF COAST OIL REPORTER

What's Ahead OFFSHORE? See Pages 11-16

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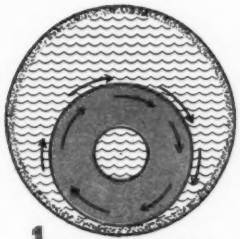
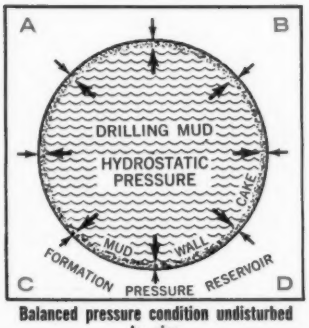
THREE WAYS TO REDUCE WALL STICKING



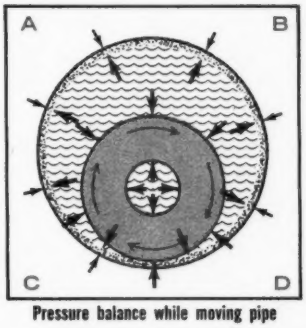
1. Keep your drilling string moving.

2. Keep your drill collars centered.

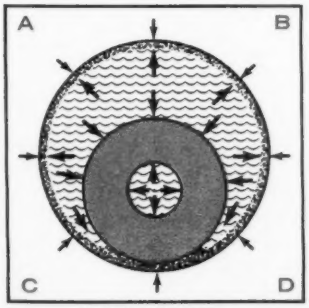
3. Use N-W-S drill collars with reduced contact area.



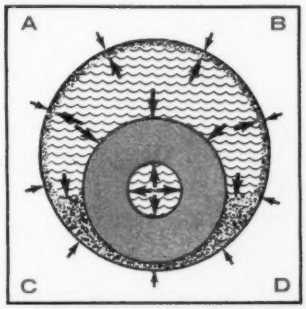
Balanced pressure condition undisturbed by pipe



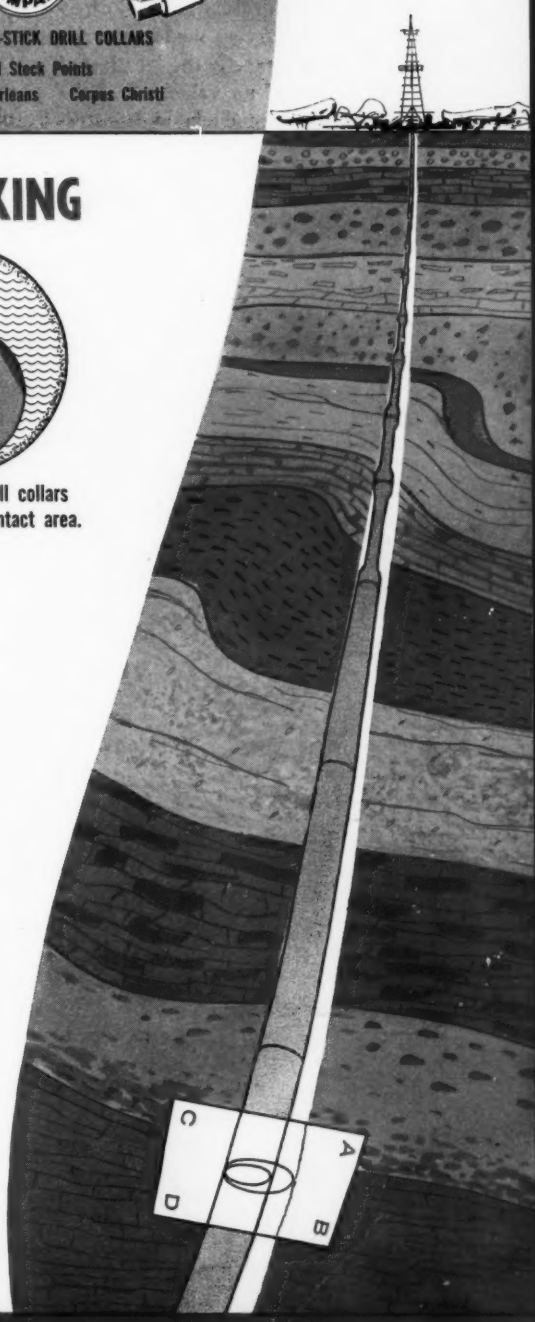
Pressure balance while moving pipe



Unbalanced pressure
Pipe stopped and beginning to stick



Pipe stuck by pressure differential

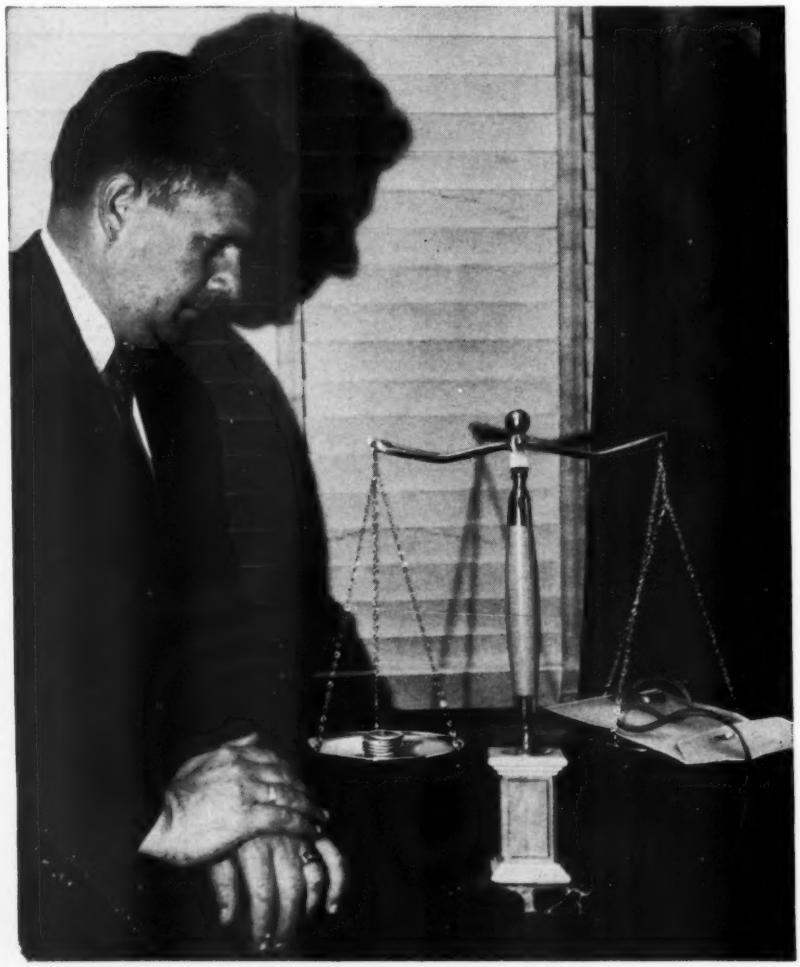


Are You Getting Your Money's Worth From Directional Surveys?

This Specialized Technical Work Requires Advanced Equipment and Trained Crews for Accuracy.

Each year millions of dollars are being spent in drilling planned directional holes. Surveys made to verify and determine exactly the location of the hole are of no value unless the most accurate methods and instruments have been used. This tremendously important and expensive phase of drilling activity was made economically feasible by three particular developments: (1) the use of non-magnetic drill collars, (2) orientation of directional drilling tools in the bottom of the hole, (3) the magnetic single shot well surveying instrument.

After having successfully drilled the directional well utilizing the information furnished by precision instruments and methods, it is good engineering practice to verify the course of the hole by having a complete survey made. There are several methods of making such a survey; however, all of these methods are of a highly specialized nature but when supervised and run by experienced and qualified personnel the results are accurate.



It was not by chance that the equipment and methods referred to above were all originated or pioneered by the Sperry-Sun Well Surveying Company. Nor has it been by chance that this company has been the specialist in making directional surveys since the beginning of this phase of oil field activity.

Three different directional surveying services are available: 1) the Surwel Gyroscopic Multishot Well Survey; 2) the Magnetic Multishot Survey; 3) the Oriented Survey.

The Gyroscopic Multishot instrument is used for making complete (top to bottom) directional surveys of either cased or uncased holes. This is the only instrument that can be operated on a line inside the casing.

The Magnetic Multishot instrument is used for making a complete directional survey of the uncased portion of the hole.

The Oriented Survey is a complete (top to bottom) directional survey of either cased or uncased holes.

By specifying that all your directional survey work be done using Sperry-Sun instruments and methods, and the confirming survey run by Sperry-Sun crews, the operator is assured exactly where the hole is—and that he gets his survey money's worth.

Operations Office for Sperry-Sun Well Surveying Company is at 3118 Blodgett Ave., Houston, Texas, with branches at Corpus Christi, Odessa, Marshall, Pampa, Wichita Falls, Texas; Lafayette, New Orleans, La.; Long Beach, Bakersfield, Ventura, Calif.; Oklahoma City, Okla.; Brookhaven, Miss.; Casper, Wyo.; and Sperry-Sun of Canada, Ltd., Edmonton, Alberta, Canada.

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What's Ahead Offshore?

Increasing Activity, Carrying Operations Into Deeper Water, Is Expert Forecast 11
- Area (Offshore) Will Yield Substantial Reserves Of New Oil And Gas .. 12
- Immediate Future For Drilling Contractor Highly Competitive 12
- The World's New Major Oil Reserves Will Be Found Offshore 14
- Technological Advances Will Lead To Increased Activity 14
- Prediction Of Increased Offshore Activity Justified 15
- Steady Activity With Good Possibilities For New Construction 15
- Offshore Oil Will Be Very Important To Our Welfare 16
- Oil Companies Are Taking Leases In Deeper and Deeper Water 16

This Month Offshore

Grooved Pipe Licks Drill String Sticking 18
Rotary Cores From 12,000-Ft. Below Ocean Surface 20
Latest Louisiana Lease Sale Nets $15.9 Million 23
New Combine Enters West Coast Offshore Picture 24
Offshore Oil Discovery In Gulf Of Suez 25
Wildcat Staked Off Florida 25
Lake Maracaibo Getting Big Waterflood 26
Second Blowout, Fire Reported In Khafi Field 27

News From The Shipyards

A Luxurious New 96-Foot Cruiser 29

News From The Service Companies

Trans Air Serves Louisiana 31

Departments And Features

Way Offshore With The Publisher 6
Advertiser's Index 8
Mobile Units, Tenders, Self-Contained Platforms 33
The Slush Pit 38

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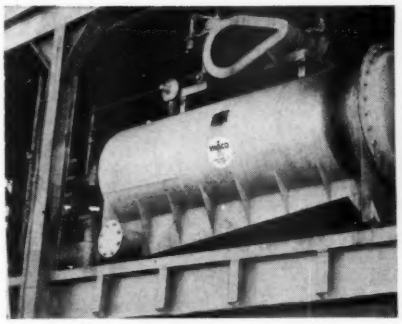
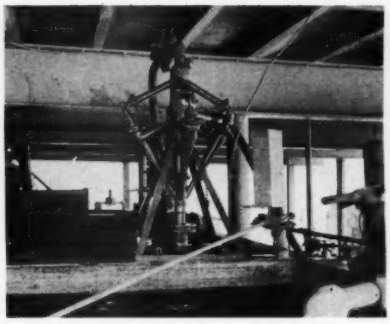
Three good ways to cut drilling costs

The three units shown here are important items behind the recent revolution in drilling fluids that has done so much to speed drilling and cut costs. Each is designed for a different problem but all are efficient and economical. Equally important, all are handled by SWACO -- the leader in mud-treating equipment.



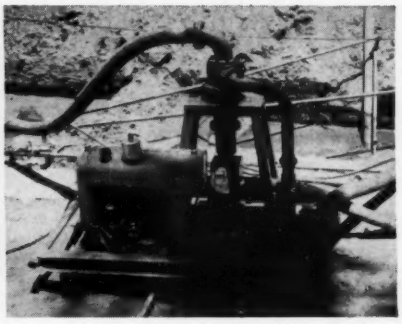
SWACO D-GASSER®

Operators frequently report saving the entire rental cost of a D-Gasser on a well in less than a day.
When mud is gas-cut, the D-Gasser saves money in many ways. It cuts time lost for circulating after trips. It reduces barite costs, it minimizes lost circulation costs and problems. It maintains mud pump efficiency and it actually makes possible the close control of mud weight and viscosity that results in faster drilling with increased safety.



CLAYJECTOR®

If you are using mud as heavy as 12 pounds per gallon, you can cut mud costs and increase drilling rate by using a Clayjector. This is a cyclone-type separation unit that is extremely effective at rejecting unwanted clays and retaining expensive barite.
In addition, since it makes possible the economical maintenance of a low-solids, low-viscosity mud, it actually permits a reduction in bit costs and drilling time.



D-SANDER®

The D-Sander greatly increases the life of mud pump parts and bits when sand or abrasive shale is being drilled. Since it removes virtually all sand-sized solids from the mud, excessive pump-parts and bit-nozzle wear — as well as many other problems — are avoided when a D-Sander is used. There is a size and type to fit every rig and drilling condition.

These descriptions tell just a few of the many ways you can cut costs by mechanical mud treating. For the full story on how you can profit, call your nearest SWACO representative or write us direct.

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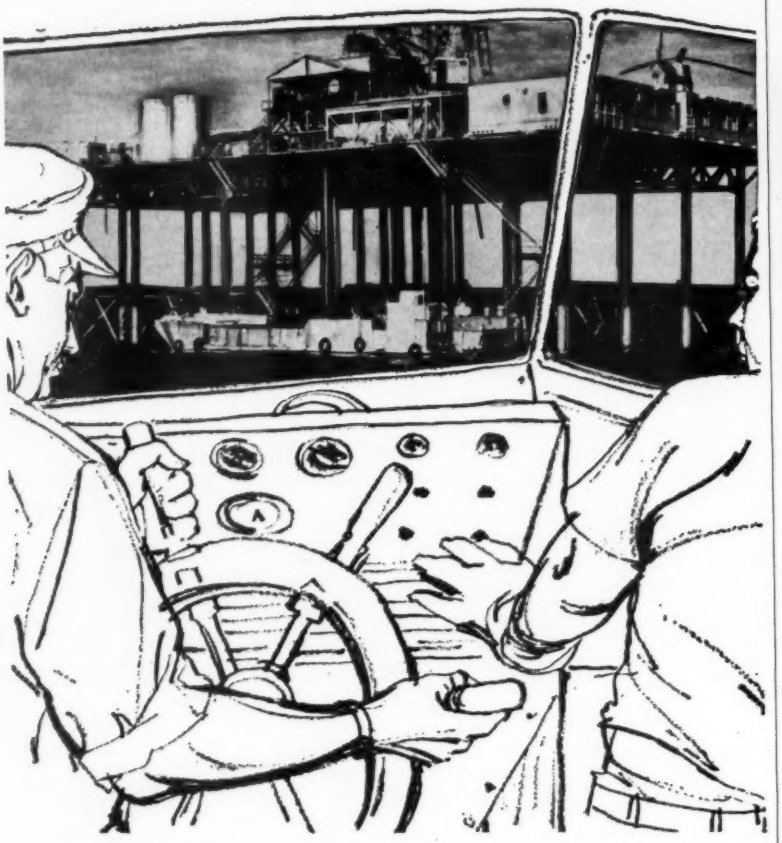

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Way offshore . . .

With the Publisher

In the slightly more than six years years that **Offshore** has been publishing, we've tried to make this column as easy and informal as a driller and his crew swapping yarns over cooneaux coffee just before catching a crewboat out to an offshore rig.

Having growed up in the cow country of West Texas and New Mexico, the shirt-tail way of doing things just comes naturally to an old boy who's chopped his share of cotton, pulled sucker rods on a lot more windmills than he likes to count, and even been slapped a few times in the ribs with a Johnson bar—something anybody who's drilled in cactus country has some acquaintance with.

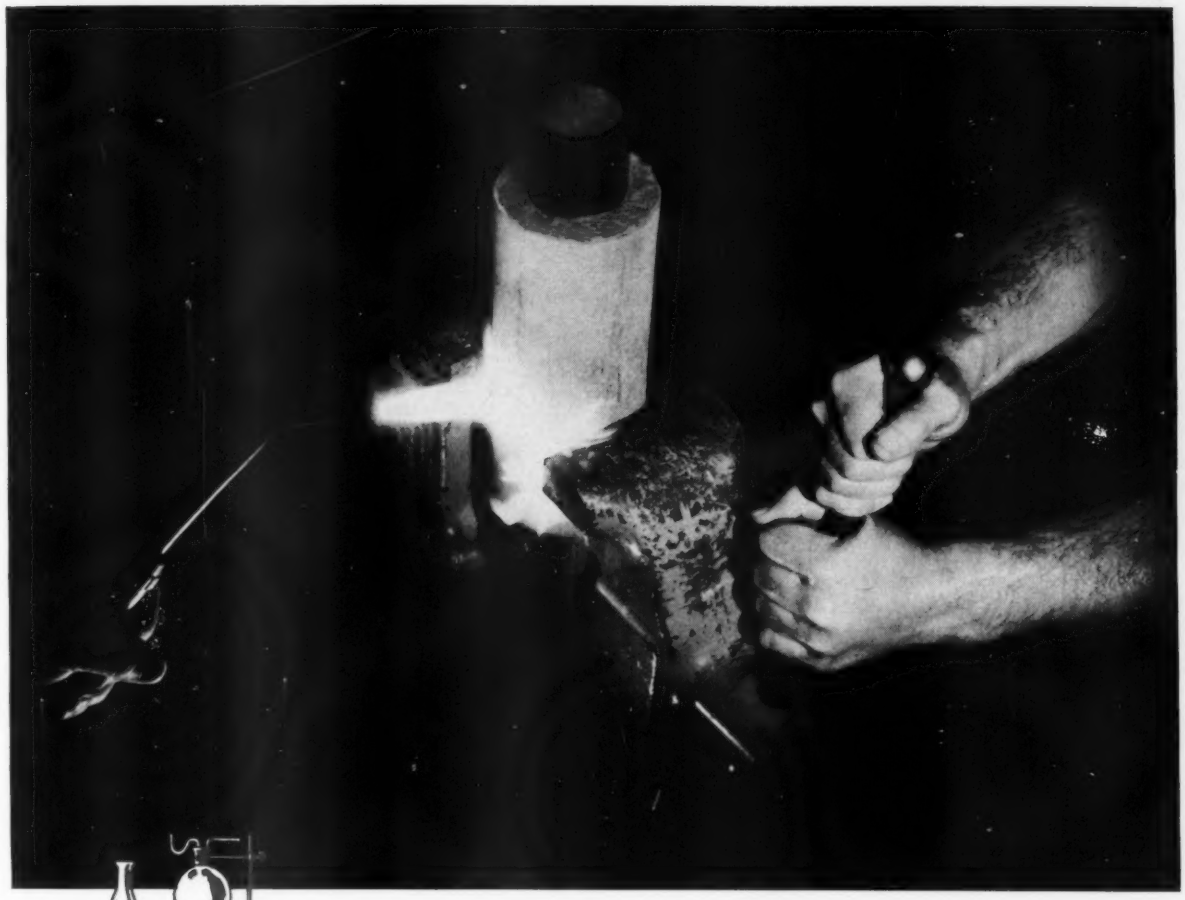
It therefore seems like putting on a Sunday shirt with a too-tight collar to go formal in this department. But the truth is, we just can't resist using a few four-bit words like "distinguished" and "dog-goned outstanding" in connection with our lead artiele.

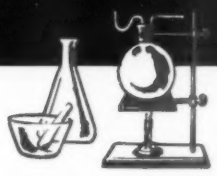
What has happened, we've asked some really important people in the industry to try and guess what's down the hole for next year, without even being able to run a drillstem test. It's a forecast, pure and simple, but what makes it unique is the fact that we did the same thing last year—using very nearly the same panel of experts—and be dogged if they didn't come in with almost a perfect score, now that we can look back and judge.

So—turn to the lead article and start reading, if you want to find out "What's ahead offshore?" These fellows have proved they not only know the business, they're darned good guessers. Which about wraps this issue up, and we guess we'll . . .

See you next month!

Long John Latham





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helps prevent loss of cement strength in hot holes

HALLIBURTON SILICA FLOUR now makes it possible to maintain or improve cement compressive strengths and keep cement permeability *low* in even the hottest wells.

Portland-type cements show drastic strength retrogression when subjected to high temperatures. A cement having a good compressive strength of 4,500 to 5,000 psi may lose *half* this strength in only 14 days exposure to high well temperatures. Silica Flour reacts chemically with the cement to help combat this strength retrogression.

Experience in cementing over 500 hot holes using blends of 20 to 40 per cent Silica Flour with retarded cements has shown impressive results in controlling strength retrogression and undesirable permeability increase. This additive is compatible with all commonly used cements, retarders, low water loss additives, weighting and lost circulation materials.

Lasting protection for your well requires lasting cement strength with low permeability. Investigate Silica Flour, another product development of Halliburton research . . . for cementing *any* well over 200° F. and for secondary recovery wells using steam or thermal drives.

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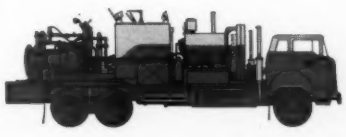

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PRODUCTS FOR THE OIL & GAS INDUSTRY

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ADVERTISERS' INDEX

Adams & Porter 37

Baldt Anchor, Chain & Forge Div. 37

Baroid Division National Lead Co. 27
AGENCY—Craig & Associates

Bedell & Nelson Engineers 35

Berwick Shipyard & Drydock Co. 31

Caspary-Wendell Work Boats 34

Cenac Towing Co. 31

Clyde Iron Works, Inc. ..... back cover
AGENCY—Graves & Associates

Coastal Casting Marine Service 31

Crescent Towing & Salvage Co. 13
AGENCY—Godwin Adv.

Cunningham Engineering Co. 35

Dantzler Boat and Barge Corp. 22

Arthur D. Darden 35

Dowell Division of The Dow Chemical Co. 8
AGENCY—Rives, Dyke and Co.

Dowell Division of The Dow Chemical Co. ..... inside back cover
AGENCY—Rives, Dyke and Co.

Engineering Enterprises, Inc. ..... front cover
AGENCY—Gregory-Giezendanner Co.

Equipos Marinos 36

Eustis Engineering Co. 35
AGENCY—Lando Adv.

Mike Fields 32

L. B. Foster Co. 6

G & H Offshore Towing Co. 3
AGENCY—Robinson-Gerrard-McGary, Inc.

George Engine Co. 26
AGENCY—Maginnis & Baccich Adv.

Global Marine Exploration Co. 36

Gulf Crews, Inc. 19

Gulfport Shipbuilding Corp. 26

Gurtler, Hebert & Co. 25
AGENCY—Maginnis & Baccich Adv.

Halliburton Co. 7
AGENCY—Glenn Adv.

Hardin and Ferguson, Inc. 26
AGENCY—Godwin Adv.

H. B. "Buster" Hughes 32

Humble Oil & Refining Co. 17
AGENCY—McCann-Erickson Adv.

Jefferson Boat and Machine Co. 35

Thomas Jordan, Inc. 19
AGENCY—Verne Kirby Adv.

Kennedy Marine Engine Co 32

Leeville Shipyard Corp. 31

McClelland Engineers 35

McDonough Marine Service 30
AGENCY—Maginnis & Baccich Adv.

Macwhyte Co. 22
AGENCY—Hoffman, York, Paulson & Gerlach, Inc.

Robert H. Macy 35

Marine Service Co. 8

Maritime Insurance Agency 34

Markey Machinery Co. 18
AGENCY—Gail Adv.

Marsh & McLennan, Inc. 24
AGENCY—Stone-Stevens, Inc.

Mavor-Kelly Co. 32
AGENCY—Craig & Associates

Mobile Towing & Wrecking Co. 28

Offshore Towing Co. 37

Petroleum Distributing Co. 30
AGENCY—Lowe Runkle Co.

Robin Boat Rental Service 37

Salt Water Control, Inc. 5
AGENCY—Rives, Dyke and Co.

Southern Marine & Aviation Underwriters 33
AGENCY—Robert Kottwitz Adv.

Sperry-Sun Well Surveying Co. ..... inside front cover
AGENCY—Ullrich & Brown Adv.

State Boat Corp. 37
AGENCY—Rives, Dyke and Co.

Tideland Specialty Co. 10
AGENCY—Thobae Browder Adv.

Twenty Grand Towing, Inc. 9
AGENCY—Godwin Adv.

Wam, Inc. 19

John L. Wortham & Son 28
AGENCY—Boone & Cummings

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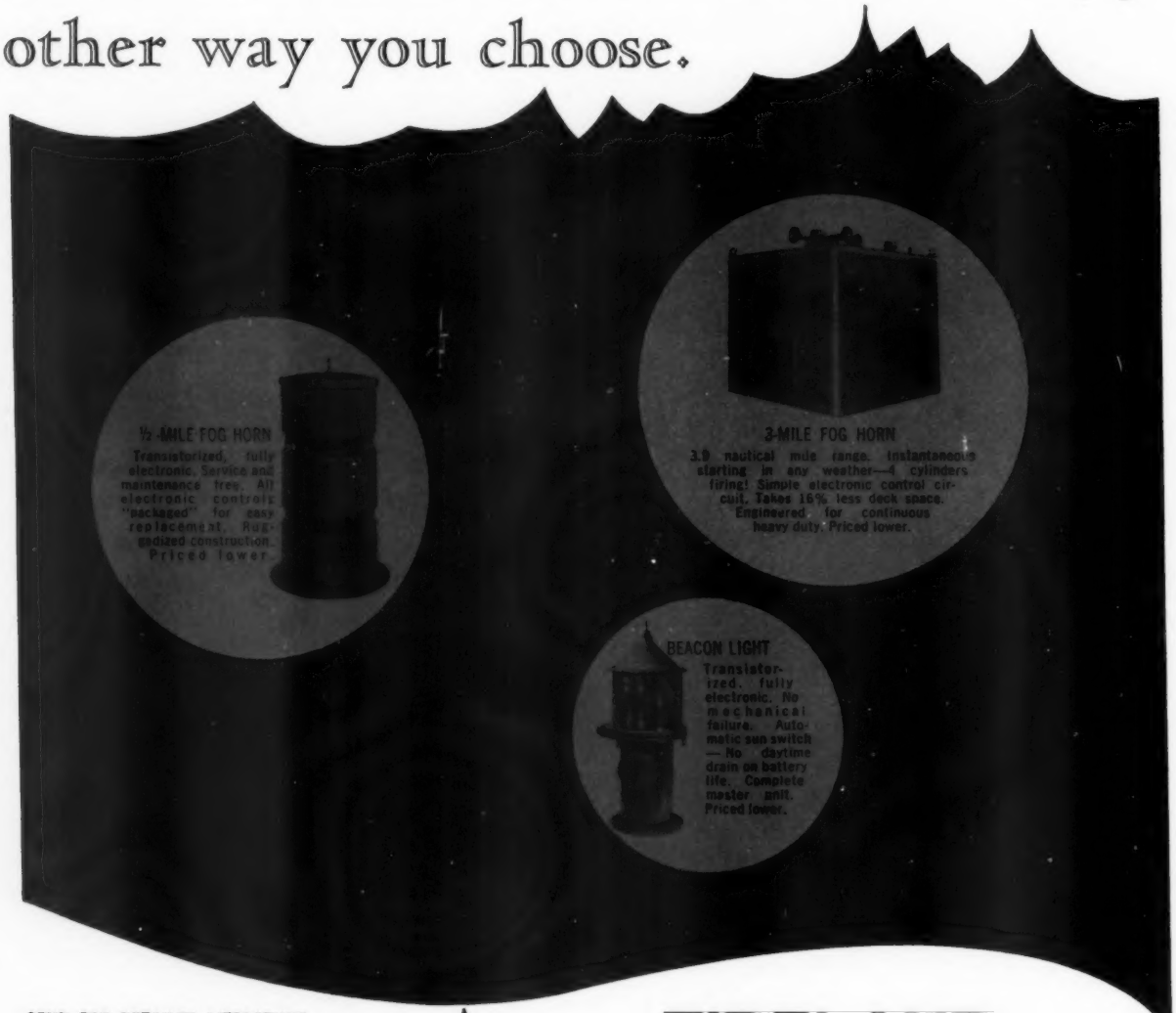
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What's ahead offshore?

Increasing Activity, Carrying Operations Into Deeper Water, Is Expert Forecast

- **Renewed construction is expected to add workover barges this year, mobile drilling units for operation in water depths up to 300 feet by 1962**
- **Offshore oilfields with subsea wellheads will be developed within the year in several different areas. This and other technological advances will continue to cut excessively high offshore operating cost**
- **The experts predict these developments—and many more—for the industry in the near future. Read their forecast—**

A year ago, **Offshore** asked a panel of experts from among prominent oil company, drilling contractor and service company personnel to publish their impressions of what the future held for the industry—gauged on both a short term and long range basis.

This collective forecast turned out to be so uncannily accurate that this year we have gone back to the same companies, and in many instances the same individuals, to repeat the performance.

If our experts are right again, here is what you can expect the future to reveal.

● "The next 12 months will see a small but steady increase (in offshore activity)—" **Harry P. Conroy,** vice president in charge of field operations, Halliburton Company.

● Construction of deepwater drilling units and other specialized offshore equipment will be renewed. "Many contractors are considering deepwater barges . . . Additional interest has been shown in offshore workover units, and some should be placed in service this year—" **E. A. Dunn,** regional manager, Continental-Emsco Company.

"The company (Kerr-McGee) is presently considering the possibility of building a new submersible barge drilling rig that will be capable of drilling in waters deeper than ever have been drilled in before with submersible rigs—" **A. T. F. Seale,** vice president-opeations, Kerr-McGee Oil Industries, Inc.

"I feel that our company will be making major contributions to the lowering of offshore operation costs by producing improved equipment, probably for delivery in 1962, to work in waters particularly in the 100 to 300 foot depths—" **R. L. LeTourneau,** vice president, R. G. LeTourneau, Inc.

● The problems of excessive high cost offshore will continue to be attacked from many angles. "We think the next year will see development of offshore oil fields with subsea wellheads in several different areas. Once this pattern has been established, it would be our guess that offshore oil could be located, developed, produced and marketed at a lesser cost than can oil produced onshore—" **R. L. Bauer,** president, Global Marine Exploration Company.

"The big deterrent to flourishing offshore operations is its uniquely high cost. Specialized equipment and techniques developed by the service companies can do much to improve the profit picture—" **Harry P. Conroy.**

● The year past has been one of fast-paced progress. A drilling ship (the CUSS I, owned by Global Marine Exploration Company of Los Angeles) pushed back the depth barrier by drilling first in 3,000 feet of water, and then in an unbelievable 12,000 feet of water.

Underwater completions were actually accomplished in widely separated areas—off Peru and California, and in the Gulf of Mexico.

But even in the face of these impressive technical achievements, and in spite of the general optimism expressed by our panel of experts, many problems remain unsettled. This particularly applies to the outer continental self area of the U.S. Gulf Coast. "It is reasonable to assume that this area will yield substantial reserves of new oil and gas, but . . . preliminary investigations indicate that to explore in water 200 to 600 feet deep will be considerably more costly than drilling in shallower waters and many times more expensive than onshore operations . . . If the finding of these new domestic reserves is to be financially feasible, the return per well must be considerably improved over current standards. This can only be accomplished by increasing the per well allowables—" **E. B. Miller, Jr.,** vice president and general manager, Southern Division, Tidewater Oil Company.

"A year ago I predicted for the long term a sound and rewarding future for the offshore oil and gas industry . . . But in order to satisfactorily exploit the deeper waters, a whole new concept of allowables, well-spacing and arbitrary controls will have to be developed—" **Alden J. Laborde,** president, Ocean Drilling & Exploration Company.

"Of course, as in any project, economics must be of prime consideration. It must be favorable for a drilling program to proceed ahead at a rapid pace. As long as the world supply of crude oil and domestic supply of natural gas are in abundance, the search for

new oil and gas reservoirs in the deeper (and more expensive) areas is not going to accelerate greatly—" A. T. F. Seale.

"The immediate future for the drilling contractor is to be highly competitive and will produce profit margins that will not long sustain the industry . . . Drilling contractors are realizing that we, ourselves, can be the only salvation of our industry—" J. P. Johnson, manager, Penrod Drilling Company.

But for the full statement of each member of Offshore's guest panel of experts, read the following—

Area will yield substantial reserves of new oil and gas

"But all of us must realize that these new and necessary domestic (offshore) reserves are going to cost a great deal of money to find and develop—"

By E. B. MILLER, JR.

Vice President and General Manager, Southern Division
Tidewater Oil Company

E. B. MILLER, JR.

"The outer continental shelf of the Gulf Coast, one of the few remaining unexplored regions within the continental limits of the United States, has to be one of the next major targets of oil industry exploration.

"It is reasonable to assume that this area will yield substantial reserves of new oil and gas, but all of us—the industry, state and federal agencies and lawmakers, and the consuming public—must realize that these new and necessary domestic reserves are going to cost a great deal of money to find and develop.

"Preliminary investigations indicate that to explore in water 200 to 600 feet deep will be considerably more costly than drilling in shallower waters and many times more expensive than onshore operations. Moreover, millions of research dollars will have to be spent in the development of new equipment and and special techniques to make this exploration program possible.

"The oil industry is already taking steps to meet this challenge. But if the finding of these new domestic reserves is to be financially feasible, the return per well must be considerably improved over current standards. This can be accomplished only by increasing the per well allowables —based on a formula which provides for maximum efficiency in reservoir development. Certainly the oil industry can no longer afford to drill unnecessary wells on a 40 or 80 acre pattern in instances where reservoir characteristics would permit one well to efficiently drain 160, 320 or even 640 acres.

"In this regard the State of Louisiana is to be congratulated on its new location formula, adopted in 1960, which penalizes operators for developing on less than 40 acre spacing while granting a premium for spacing up to 80 acres.

"Federal and state conservation bodies must recognize this vital problem peculiar to offshore operations and realize that they alone hold in their hands the future of the offshore oil industry."

Immediate future for drilling contractor highly competitive

"Drilling contractors are realizing that we, ourselves, can be the only salvation of our industry—"

By J. P. (JACK) JOHNSON

Manager
Penrod Drilling Company

J. P. (JACK) JOHNSON

"First, we (at Penrod) think the immediate future for the drilling contractor is to be highly competitive, and will produce profit margins that will not long sustain the industry.

"However, we believe we see a stiffening of contractor attitude toward the demand for increased risk without commensurate return. This is reflected in recent actions within the American Association of Oilwell Drilling Contractors, and in the actions of certain aggressive and businesslike non-members of that association.

"Drilling contractors are realizing that we, ourselves, can be the only salvation of our industry, and while our start is late nevertheless we feel it is not too late. Honest cost accounting, good operating efficiency and businesslike bidding for reasonable profits will again produce the necessary strong members of our segment of the oil industry, most of whom are present operators in that industry."

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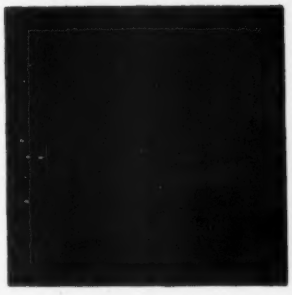

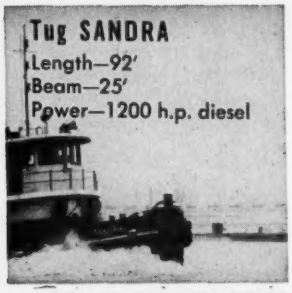

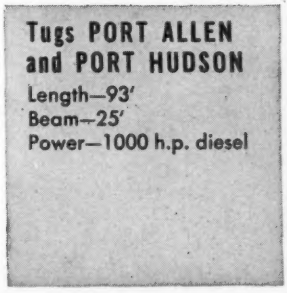

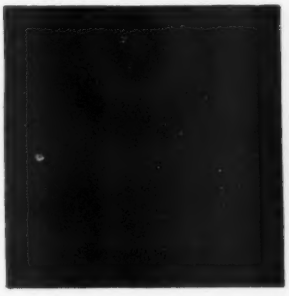

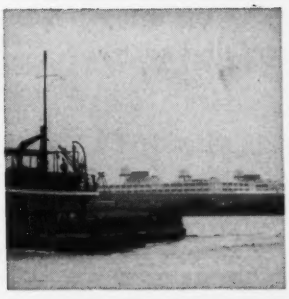

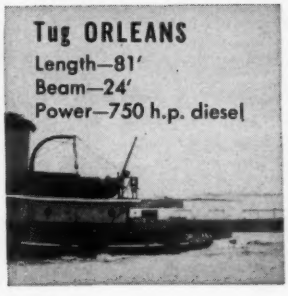

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The world's new major oil reserves will be found offshore

"Experimental drilling has extended drilling capability to 12,000 feet of water. We think the next year will see development of offshore oil fields with subsea wellheads in several different areas—"

By R. F. BAUER

President
Global Marine Exploration Company

R. F. BAUER

"It seems to be generally recognized today that most of the world's new major oil reserves will be found offshore in submerged land areas. Major oil companies have aggressive offshore oil exploration programs underway in many areas of the world. We think it is generally recognized that in order for offshore production, particularly in deeper waters, to be economic in today's highly competitive world oil market, new methods of development are needed, in order that this oil may be produced more cheaply.

"Recent trends have indicated a quickened pace in both of these areas. Several major operators have been designing and tracing experimental subsea wellhead systems and with a marked degree of success. Also, land acquisition activity and exploration activity has rapidly increased into waters in some cases in excess of 600 feet deep. Experimental drilling recently accomplished has extended drilling capability in 3,000 and then to 12,000 feet of water.

"We think the next year will see development of offshore oil fields with subsea wellheads by many of the major operators in several different areas. Once this pattern has been established, it would be our guess that offshore oil could be located, developed, produced and marketed at a lesser cost than can oil produced onshore."

Technological advances will lead to increased activity

"That is why our philosophy in the development and construction of deep-water drilling devices is based on projected future demands for oil and gas—"

By A. T. F. SEALE

Vice President — Operations
Kerr-McGee Oil Industries, Inc.

A. T. F. SEALE

"Kerr-McGee has pioneered in the development of drilling techniques and equipment to meet the demands of the oil industry as its operations in the Gulf of Mexico have moved further seaward.

"We intend to continue this pioneering tradition. The company is presently considering the possibility of building a new submersible barge drilling rig that will be capable of drilling in waters deeper than ever have been drilled in before with submersible rigs.

"Of course, as in any project, economics must be of prime consideration. It must be favorable for a drilling program to proceed ahead at a rapid pace. As long as the world supply of crude oil and domestic supply of natural gas are in abundance, the search for new oil and gas reservoirs in the deeper (and more expensive) areas is not going to accelerate greatly, nor do we believe it will decline much below present level.

"We also believe there will be continued progress in technology for exploratory and development drilling as well as production techniques. These anticipated technological advances eventually will lead to increased activity. That is why our philosophy in the development and construction of deep-water drilling devices is based on projected future demands for oil and gas reserves rather than on immediate demands.

"Should there be an increased requirement for production of oil and gas from new areas, Kerr-McGee plans to be ready with advanced designs of offshore drilling equipment with which to move forward at whatever pace demanded by the industry."

Prediction of increased offshore activity justified

"The big deterrent to flourishing offshore operations is its uniquely high cost. Specialized equipment and techniques developed by the service companies can do much to improve the profit picture—"

By HARRY P. CONROY

Vice President in Charge of Field Operations
Halliburton Company

"A year ago in this space I predicted that the pace of offshore operations should increase steadily but unspectacularly. Edging a little further out on this limb, it is my opinion that the next 12 months will see a small but steady increase.

"Of course, the big deterrent to flourishing offshore operations is its uniquely high cost.

"The service phase of offshore operations is fully aware that it shares with the operators themselves a common responsibility for solving this cost factor.

"Specialized equipment and techniques developed by the service companies can do much to improve the profit picture. For example, among the basic Halliburton developments in this respect have been the development of pneumatic handling for bulk materials, drastically cutting space and manpower requirements; an easily portable skid-mounted high-pressure (20,000 psi) pumping unit for pumping and killing; and a fleet—first of its kind—of specialized service craft.

"Two more recent developments with particular advantage for offshore are an acid with virtually no corrosion properties, permitting downhole treatment without a workover rig; and a high temperature cementing material that has been used successfully in a steam well at 750° F.

"This latter development will be especially valuable as the offshore wells move into deeper waters and hotter producing horizons."

HARRY P. CONROY

Steady activity with good possibilities for new construction

"Many contractors are considering deepwater barges. Additional interest is being shown in offshore workover units, and some should be placed in service this year—"

By E. A. DUNN

Regional Manager
Continental-Emsco Company

"Offshore drilling has been steady for the past few years. Most of the movable rigs have enjoyed good employment with a gradual increase in the platform and platform-tender units to bring the total rig count up to its present level. Our indications are that this work will continue with particular interest in water depths of 50 feet or greater.

"Many contractors are considering deepwater barges, and some preliminary design work has been started. It is quite possible that construction of a few deepwater rigs will be started late this year for completion in 1962. Units capable of drilling in depths of 150 feet or greater will multiply cost, but can and will be built as soon as the demand justifies the expenditures. Additional interest has been shown in offshore workover units and some should be placed in service this year.

"The overall picture has been encouraging and could be improved further by a lease sale in the shallow waters off the Louisiana coast. The coming year should be one of continued steady activity with good possibilities for new construction during the year."

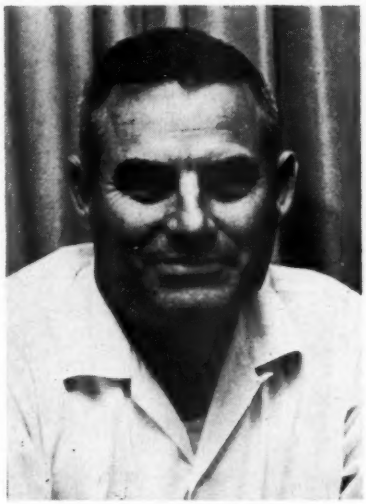
E. A. DUNN

Offshore oil will be very important to our welfare

"But in order to satisfactorily exploit the deeper waters, a whole new concept of allowables, well-spacing and arbitrary controls will have to be developed—"

By ALDEN J. LABORDE

President
Ocean Drilling & Exploration Company



ALDEN J. LABORDE

"A year ago I predicted for the long term a sound and rewarding future for the offshore oil and gas industry. Developments during the year have done nothing to change this outlook, but admittedly have not significantly clarified the time schedule for its fulfillment. Recent interest in deeper water leases, and reports of technological developments for exploring them are adding new considerations into the speculation, and these coupled with the conflicting policies of government and operators still cloud my crystal ball.

"I am convinced we can and will solve the technological problems. But in order to satisfactorily exploit the deeper waters, a whole new concept of allowables, well-spacing, and arbitrary controls will have to be developed, directed toward minimizing the adverse effect of such artificial barriers to maximum engineering and economic efficiency. I realize, however, that meaningful changes in this field will be difficult if not impossible until such time as the overall condition of the domestic oil industry has improved sufficiently to eliminate the risk that such changes would seriously upset the now delicate balance of supply and demand. It is not too soon, however, for operators and regulatory bodies to start planning for the day, possibly only four or five years away, when offshore oil will be very important to the welfare of our industry and country."

Oil companies are taking leases in deeper and deeper water

"I feel that our company will be making major contributions to the lowering of offshore operation costs by producing improved equipment, probably for delivery in 1962, for working in waters 100 to 300 feet deep—"

By R. L. LeTOURNEAU

Vice President
R. G. LeTourneau, Inc.

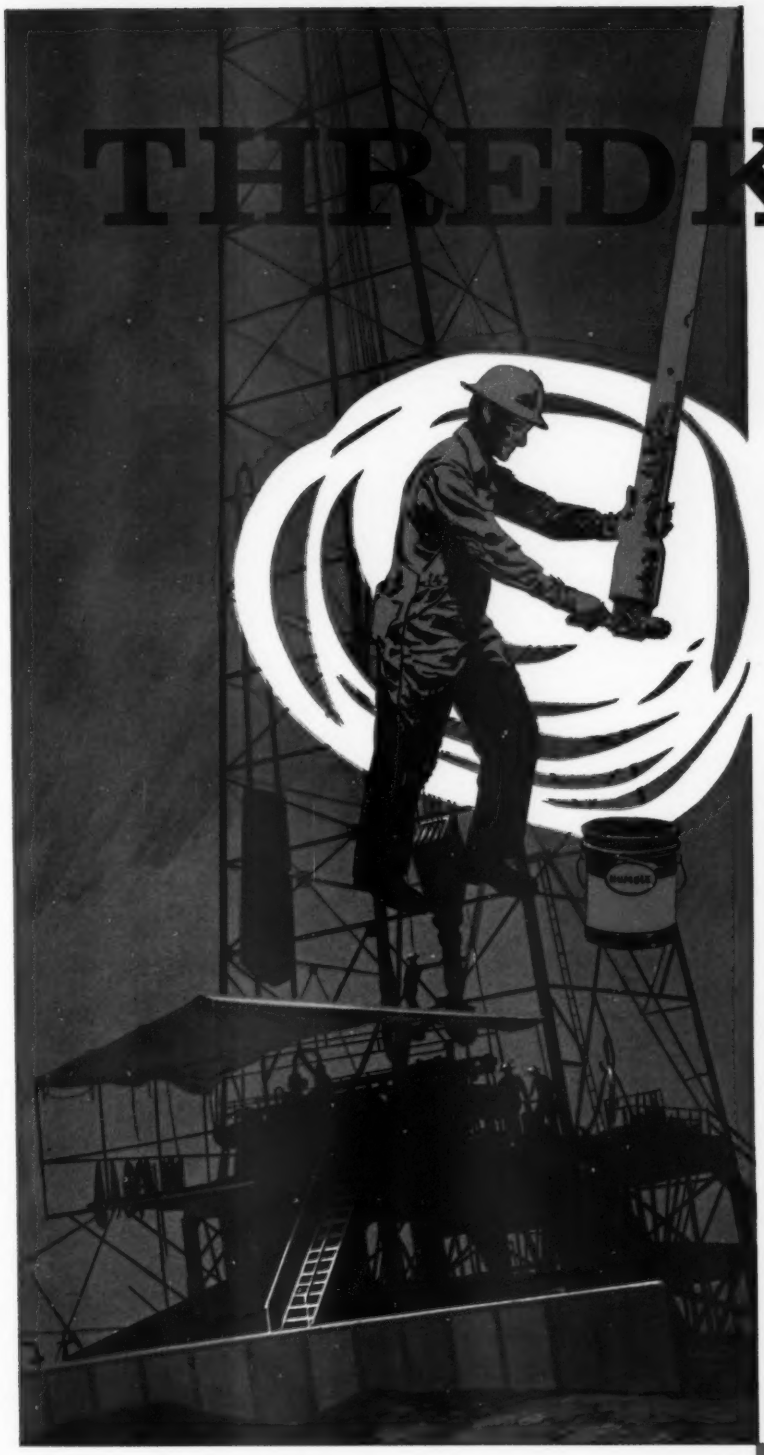
R. L. LeTOURNEAU

"As major oil companies around the world keep up their search for adequate petroleum reserves, they are taking leases in deeper and deeper water. With each increase in depth, new problems for the drilling contractor are introduced.

"As an equipment manufacturer, we continue to explore ways to simplify mobile deep water drilling of exploration and development wells, their completion and workover as well as their attendant oil storage problems.

"I feel that our company will be making major contributions to the lowering of offshore operation costs by producing improved equipment, probably for delivery in 1962, to work in waters particularly in the 100 to 300 foot depths. The time now appears at hand for the aggressive contractors to be the early birds in deep water and reap the rewards.

"In the range below 100 feet where the bulk drilling is presently being conducted in the Gulf of Mexico and other places, costs should continue to be lowered with better drilling equipment and methods."



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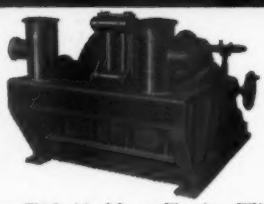

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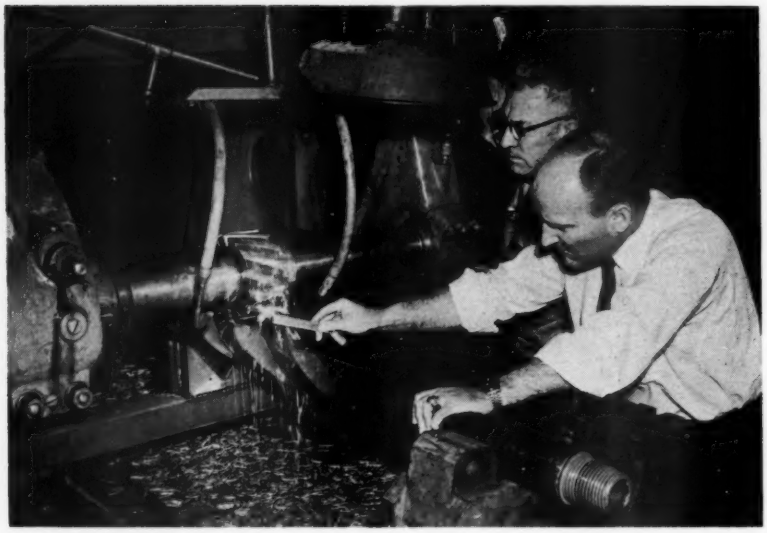

JOINT OF DRILLPIPE is grooved to prevent sticking in method developed by Engineering Enterprises, Inc. The pipe is slightly larger than standard size so that when it is grooved it has the weight and strength of regular pipe. Checking the job are W. T. Tubbs (left) of Pritchett Engineering & Machine, Inc., which is doing the work on contract, and Fred K. Fox, president of Engineering Enterprises, Inc.

Grooved Pipe . . .

Licks Drill String Sticking

Method proved its merit on drill collars before being adapted to drill pipe use

A Houston oilwell equipment manufacturer has come up with a new idea to prevent drillpipe from sticking.

It's so simple that the wonder is nobody ever thought of it before.

The man is Fred K. Fox of 242 Stoney Creek, president and founder of Engineering Enterprises, Inc.

The idea is a groove or flattened surface on three points on the outside of the pipe. At first glance it looks like rifling in a rifle barrel but it is different.

Fox explained that if the grooving is recessed like rifling it would destroy the advantage gained from the treatment.

The principle is that drill pipe sticks because it gets against the side of the well hole and becomes frozen there.

That's because the drilling mud is then all on one side and is pushing the pipe harder against the well bore.

Only a small space between the drill pipe and the well bore will permit enough pressure to keep drilling mud surrounding the pipe.

Holes aren't ever straight—to a true vertical. They jog to one side and then another, and are kept in a fairly straight line by special drilling techniques which put them in the right direction when they get off.

The result is a hole somewhat like an elongated and slim letter S. This makes the pipe rub against the walls of the hole. Often it sticks there and sometimes the drill pipe will twist off and break when the rotary starts up.

That means an expensive fishing job.

Fox said he got the idea from a report on some experiments by Shell Oil Company about five years ago, which showed why drillpipe sticks. Stabilizers were used first to center the pipe. These have disadvantages.

Fox said he finally thought out a method which he adapted to drill collars, and it worked. He said the pipe has worked in numerous tests and is being used in drilling on the Gulf Coast and offshore.

Fox worked for oil industry firms and was consulting engineer before forming his company.

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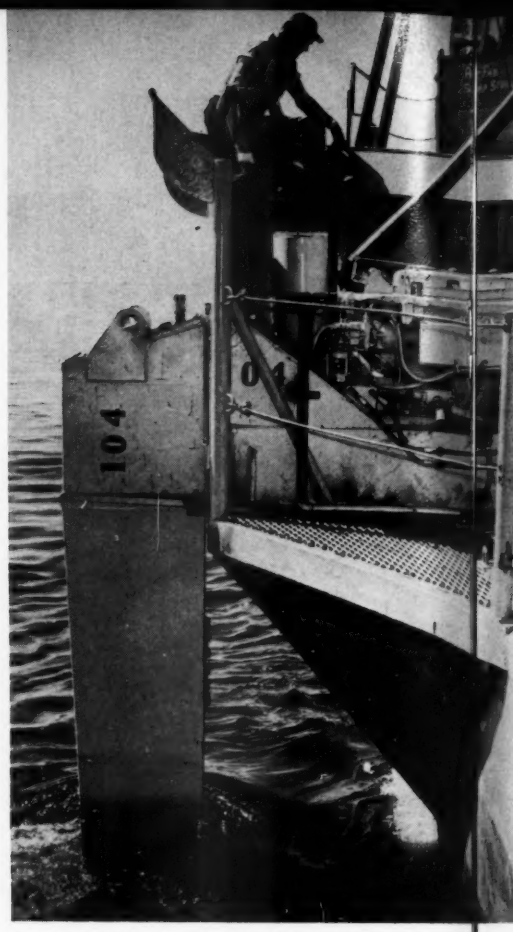
LOWER PORTION OF TUBULAR GUIDE SHOE that distributed bending strain along the drill string. Section shown is lowered below grating and smaller upper portion connects to rotary table.



ONE OF FOUR OUTBOARDS that held CUSS I on location during drilling operations in 12,000-ft. of water.

IDECO'S DUOMATIC DUAL ELEVATOR SYSTEM came through its first salt water test with flying colors. System prevents risk of damaging drill string with slips.

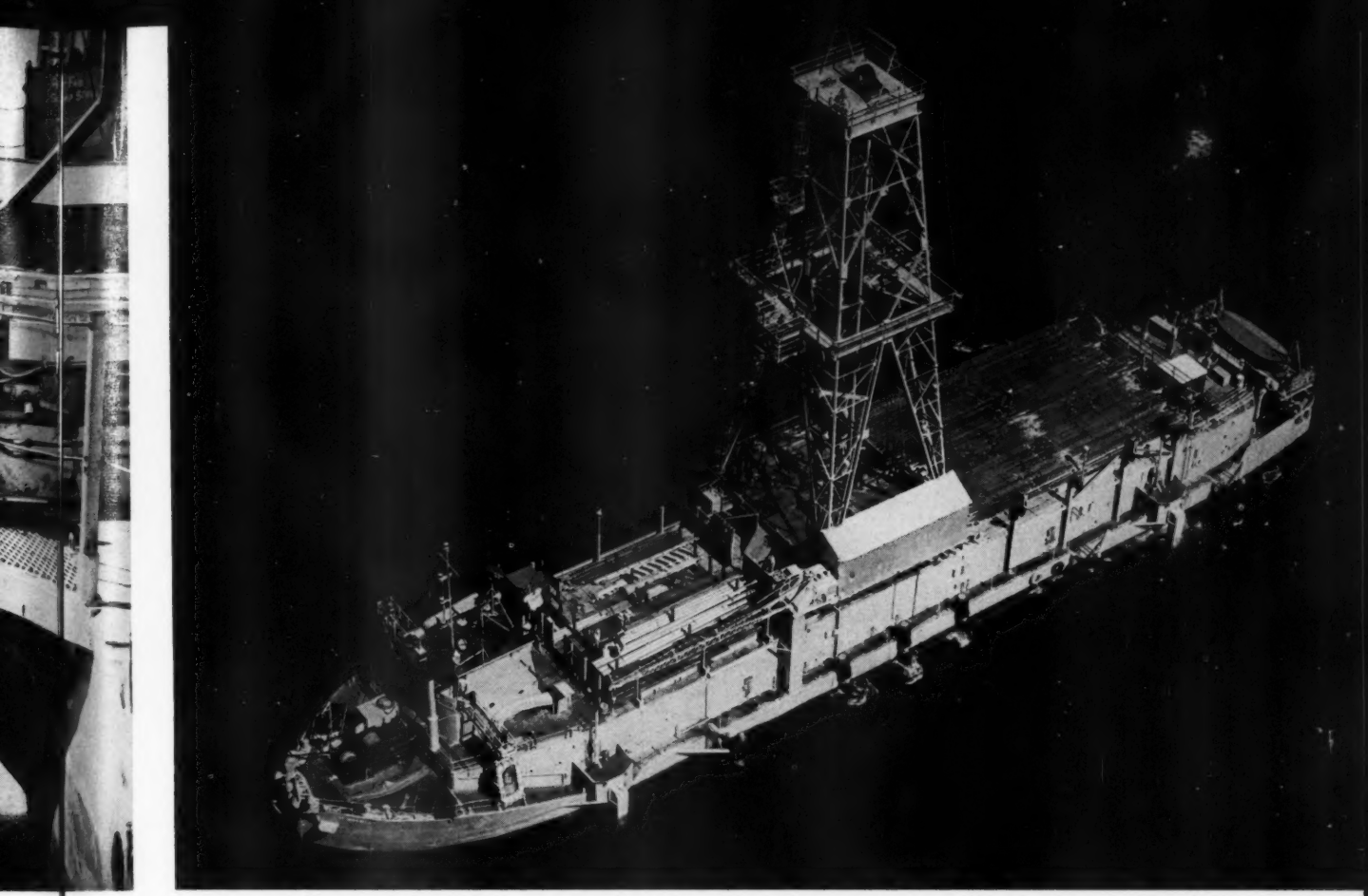
ROTARY CORES

COMPLETION OF PHASE II

Global Marine Exploration Company's 3,000-ton drilling vessel **CUSS I**, specially fitted out with four outboard diesels for positioning in the open Pacific, was responsible for the successful completion of Phase II of Project Mohole, in which rotary cores were taken from five holes in the ocean floor 12,000-ft. beneath the surface of the sea.

Project Mohole is the brain child of the AMSOC Committee of the National Academy of Sciences, and has the ultimate objective of drilling a 15,000-ft. core hole into the Mohorovicic discontinuity beneath 18,000-ft. of water. When this ultimate phase is attempted, it will include many techniques employed in the recently completed first phase of Project Mohole.

"Dynamic positioning" is one of these techniques. As employed aboard



DRILLING VESSEL CUSS I, with over 13,000-ft. of high alloy drill pipe on its horizontal pipe racks, prepares to begin "Moholing" off Guadalupe Island. Note outboard motors fore and aft. A control console that integrated speed and thrust direction of each of these outboard diesels enabled ordinary seaman to hold ship on location during drilling operations.

RES FROM 12,000-FEET BELOW THE OCEAN SURFACE

SE II OF MOHOLE PROJECT PROVES TECHNIQUES OF ULTRA-DEEP WATER DRILLING

CUSS I, it was thoroughly successful. The vessel was held within a radius of 500-ft. of a position over the center of the hole despite winds up to 40 mph and seas as high as 14-ft. at 8 to 11 second frequency. Radar and sonar targets connected to three anchored buoys near the vessel were used to check position. A specially built control console that integrated speed and thrust direction of each of the Murray & Tregurtah outboard diesels enabled an ordinary seaman to hold the CUSS on location between these buoys by watching the position of target slips on radar and sonar screens.

Drill string . . . The drill string was engineered to accommodate the extreme twisting and bending moments set up as a result of the heaving and rolling of the CUSS, the ocean currents and the forces exerted on the drill string when the CUSS drifted off of the hole center.

To ease strain on the pipe below the rotary table, these stresses were distributed out along the drill string through the use of a trumpet-like guide shoe that extended down below the rotary table for 40-ft. A specially machined casing rising above the landing base on the ocean floor and designed to ease bending moments at that point was not used.

Drill pipe in the guide shoe area was stacked with four BJ protectors per joint, to assure a smooth curve when the pipe bent against the guide shoe. A specially designed round fluted kelly by Baash-Ross reduced kelly wear on the guide shoe and also reduced vibration.

"Free drilling" . . . No conductor pipe connected the CUSS with the bottom. This was "free drilling" and twelve 7½-in. drill collars and four 5-ft. stroke bumper subs supplied the weight and the vertical movement necessary to keep the bit on bottom.

All drilling was done with diamond core bits specially manufactured for the job. In the softer overlay material, Servco punch-type orienting core tools and a specially made christensen hydraulic core tool were employed.

Weight fluctuated . . . The continual movement of the CUSS I in the ocean swells and the resulting flexing of two miles of drill pipe made gauging of bottom hole activity difficult. Even with 200 or 300-ft. of hole, hook weight continually fluctuated between 200,000 and 250,000 lbs., and the best technique developed for determining when the bit was on the bottom of the hole was to watch

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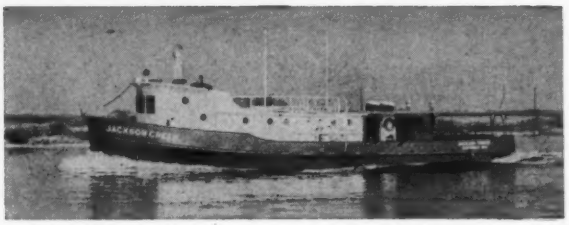

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increases in pump pressure along with increases in torque.

"We just have to play the averages," commented one of the drilling crew.

Drilling fluid . . . Salt water was used as a rotary fluid almost entirely. Pump pressure was maintained at around 500 psi and rotation ranged between 10 and 25 rpm.

Elevator system . . . The Ideco "DuoMatic" elevator system was used for the first time in offshore work, and was completely successful. It allowed elimination of slips and the possibility of wall damage to the high alloy drill string. Also, through the guide line controlling the movement of the links, tended to steady the links during the sometimes severe rolling of the **CUSS** in heavy seas.

Drilling vessel . . . The **CUSS I** was selected for the project because of its great stability and its unique semi-automatic pipe racking equipment developed by Byron Jackson some years ago, which allows pipe to be racked in a horizontal position along the deck, therefore increasing hole depth potential without creating the dangers involved in vertical racking of large amounts of pipe in a heavy sea.

Already holding the old depth record before the Mohole operation, the **CUSS I,** with five holes cored in 12,-000-ft. of water, is likely to remain the unchallenged leader in deep-water drilling efforts for some time to come.

ABOARD CUSS I during the Mohole operation are Global Marine Exploration Company's vice president and general manager A. J. Field, left, and Robert F. Bauer, president.

Latest Louisiana . . .

Lease Sale Nets $15.9 Million

"Inland marine" parcel brings biggest per acre price of $1,608—offshore tracts go for $10 million

Louisiana's first lease sale of 1961 netted the state $15,996,135.00 in high bids for tracts that were mostly "marine"—even though many were located inland and not offshore.

An inland marine tract in Lafourche and Terrebonne parishes, north of Bay Marchand, brought the high per-acre bid of the sale. Texaco Inc. and Louisiana Land & Exploration Company bid $2,605,818.00 for the 1,620-acre piece of marshland real estate, or $1,608.00 per acre.

The highest per-acre bid offshore was made by Humble Oil & Refining Company. Humble bid $2,657,575.00 for Tract 7955, comprising 3,450 acres in Atchafalaya Bay, or $770.31.

A record in royalty payment was set at the sale. J. C. Trahan Drilling Company, Hope Natural Gas Company and Amerada Petroleum Company bid $2,398.00 for a 3.5-acre tract belonging to St. John the Baptist Parish schools—for a lease agreement carrying a royalty interest of 52 percent.

All of the offshore acreage offered at the sale was in Zone 1, controlled by the state. Most of the acreage had been leased previously, and relinquished, but still drew the big interest in the sale. In all, $10,265,000.00 was bid for 16 offshore tracts—in the West Cameron Area, Vermilion Area, Atchafalaya Bay, South Timbalier Bay, Grand Isle Area, Breton Sound Area and Main Pass Area.

Two bids were received on offshore tracts in excess of $1 million—and both were made by Humble Oil & Refining Company for tracts in Atchafalaya Bay. In addition to the tract in Atchafalaya Bay on which Humble made the sale's high bid, the company bid $2,220,500.00 for Tract 7957, just to the east.

In all, 17 bids were made on offshore tracts—with one bid already rejected. A total of 42 offshore tracts were offered.

An unusual sidelight of the sale was the fact that some of the Gulf of Mexico's biggest operators—CATC, Shell, Gulf and others—did not bid on the offshore acreage.

Following are the bids accepted by the Louisiana State Mineral Board:

WEST CAMERON AREA

Tr. 7938, portion of Block 9—$205,000.00 bid by The California Oil Company for 1,000 acres.

Tr. 7939, Block 8—$1,290,963.00 bid by Pan American for 4,467 acres.

Tr. 7981, Block 6—$736,000.00 bid by The California Oil Company for 3,528 acres.

Tr. 7942, Block 5—$164,000.00 bid by The California Oil Company for 4,500 acres.

VERMILION AREA

Tr. 7948, Block 5—$151,000.00 bid by John F. Bricker for 2,227 acres.

Tr. 7949, portion of Block 16—$402,000.00 bid by John F. Bricker for 4,030 acres.

ATCHAFALAYA BAY

Tr. 7954—$627,387.00 bid by Pan American for 2,650 acres.

Tr. 7955—$2,657,575.00 bid by Humble for 3,450 acres.

Tr. 7957—$2,220,500.00 bid by Humble for 3,050 acres.

SOUTH TIMBALIER AREA

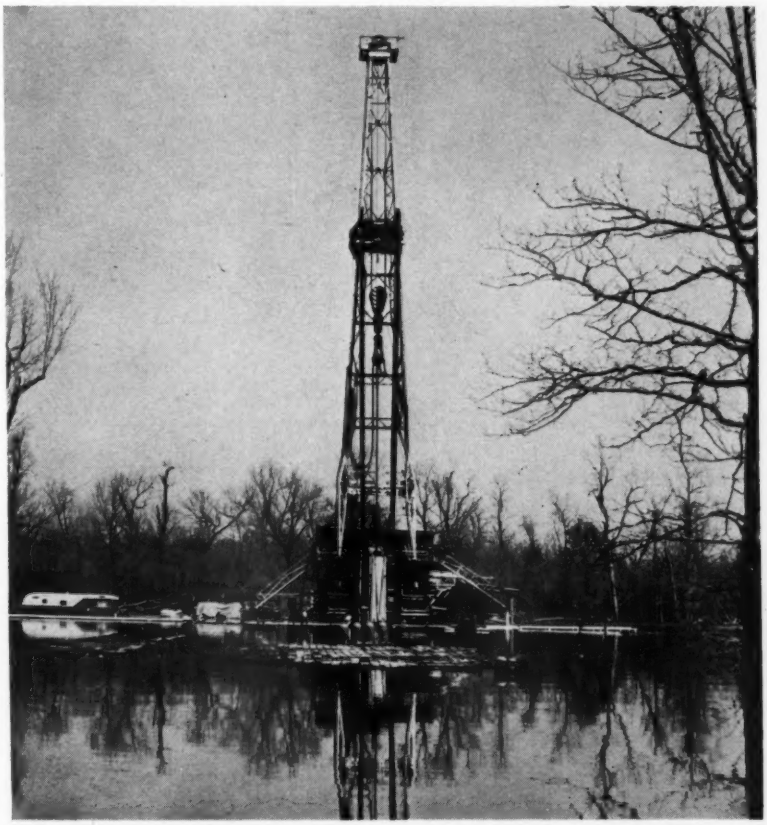
Tr. 7961, Block 7—$81,000.00 bid by The California Oil Company for 3,107 acres.

GRAND ISLE AREA

Tr. 7963, portion of Block 24—$511,111.00 bid by Lyda Hunt et al for 2,365 acres.

BRETON SOUND AREA

Tr. 7965, portion of Block 52—



Water-bound wildcat is not offshore, but 15 miles north of Vicksburg, Miss. The Gulf Oil Corporation wildcat was forced to suspend operations by high back-water from the Mississippi River. Still a two-mile boat trip from dry land, the rig stood in 40-in. of water when this photo was made. Drilling on the Issaquena County test, Eagle Bend 8-16, No. 1 stopped at 16,602-ft. for "drying out."

$126,000.00 bid by Union of California for 2,292 acres.

Tr. 7967, portion of Block 53—$95,700.00 bid by Union of California for 1,740 acres.

MAIN PASS AREA

Tr. 7972, portion of Block 6—$526,320.00 bid by Union of California for 2,448 acres.

Tr. 7973, portion of Block 91—$29,415.00 bid by Union of California for 265 acres.

Tr. 7974, portion of Block 7—$441,192.00 bid by Union of California for 2,372 acres.

Atlantic Coast

Report Fixed Platforms To Replace Floating Lightships

Fixed platforms, of the design proven successful in the hurricane-lashed waters of the Gulf of Mexico, will replace some of the floating lightships that guide ocean-going traffic into ports along the Atlantic seaboard.

One vessel, now riding at anchor at the entrance to Buzzard's Bay near Cuttyhunk Island, Massachusetts, and another at Brenton Reef near Newport Harbor, Rhode Island, are already scheduled for replacement by platforms designed by J. Ray McDermott & Co., Inc., of New Orleans, Louisiana.

Current planning indicates other lightships will be replaced over a period of time by stable platforms securely anchored to the ocean floor.

California

Submarine Pipeline To Link Platform To Coast

Phillips Petroleum Company plans to lay a submarine pipe line to its drilling and production platform on Parcel E of the California tidelands, in the Gato area off Santa Barbara.

Five wells have been drilled from the platform, which stands in water 95-ft. deep. The platform is designed to accommodate 33 wells. Phillips will lay two 6-in. and one 4-in. lines to platform to handle present and expected production.

New Combine Enters West Coast Offshore Picture

A new offshore combine—Richfield Oil Corporation, Ohio Oil Company, Tidewater Oil Company and Mobil Oil Company—has made the high bid on a 4,250-acre tract offered off California.

The group bid $1,355,111.00 for the tidelands tract off Santa Barbara County.

Texaco Inc. has been awarded a similar 4,250-acre tract in the same area on a bonus bid of $9.5 million.

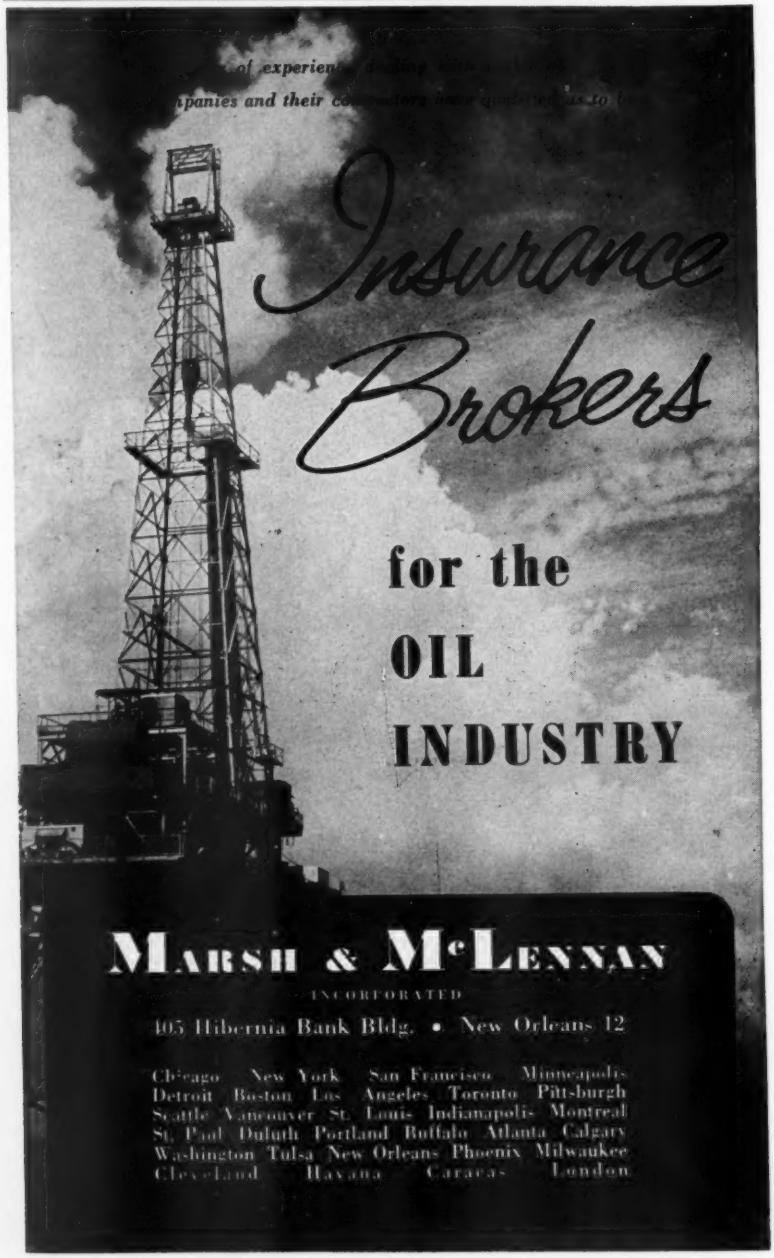
Underwater Wellhead To Be 'Elevated' Above Ocean Floor

Standard Oil Company of California, Western Operations, Inc., and Humble Oil & Refining Company plan a novel approach to underwater completions—with the wellhead 135-ft. above the ocean floor, but still nearly 100-ft. below the surface of the water.

If plans are carried out, two wells will be completed in this manner on the jointly-owned Parcel C in the Gaviota area, off Santa Barbara County. This will make water depth at the location in excess of 200-ft.—the deepest attempt at an underwater completion to date.

Richfield Plans Underwater Completion In 207-Ft. Water

Richfield Oil Corporation, which recently accomplished the industry's first underwater completion off the West Coast, plans a second under-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water installation in much deeper water.

Richfield has applied for a permit to make an underwater completion off Coal Oil Point, using the same technique developed by Richfield and Cities Service in the industry's first underwater completion in an ocean, off Peru. The well will be drilled and completed in water over 200-ft. deep.

Egypt

Offshore Oil Discovery Made In The Gulf Of Suez

Cie. Orientale des Petroles d'Egypt has announced the discovery of a 1,900 bpd oil well in the Gulf of Suez.

The offshore wildcat was drilled by the mobile unit **Scarabeo,** towed to the location off the Sinai Peninsula at Belayim Bay recently from Italy. Drilling contractor on the job is SAIPEM, subsidiary of Italy's ENI. The small portable drilling platform used for the test by SAIPEM was built in the U.S., and is serviced during drilling operations by a drilling tender.

Location of the successful wildcat is a few miles off Belayim Bay, on acreage held by Cie. Orientale des Petroles (COPE). The company is owned by International Egyptian, which is controlled by Italy's ENI (Ente Nazionale Idrocarburi) and Belgium's Petrofina, and by Egypt.

International Egyptian owns 51 percent of the company, and Egypt controls 49 percent. Cie. Orientale des Petroles now produces some 300,000 bpd from onshore fields at Abu Redeis and Belayim.

The first offshore discovery for the area is reportedly producing from 7,850-ft.

Florida

Wildcat Staked Off Florida Coast By Gulf Oil, Calco

Drilling operations on a new wildcat test has begun off the southwest coast of Florida, according to an announcement by Gulf Oil Corporation and The California Company.

Location is the No. 1 Marquesas OCS Block 46, approximately 44 miles west-southwest of Key West. The well will be drilled in 55-60-ft. of water by The Offshore Company's Rig 52, a self-contained mobile drilling platform. Gulf will be operator of the well, and Key West will be base of operations.

The wildcat will be the third drilled by Gulf and Calco on the Federal leases since they were acquired in August, 1959. Previous tests all resulted in dry holes.

Gabon

First Offshore Wildcat Spotted 5 Miles At Sea

When The Offshore Company of Baton Rouge, La. spuds in its first well on Mobil-SPAEF acreage off Gabon, the location will be some 5 miles at sea, off Ekueta.

Offshore will use a tri-legged drilling barge now under construction in Louisiana. The barge is being built for The Offshore Company's foreign operating subsidiary, Offshore International, and will be towed from the U.S. Gulf Coast to Gabon.

The platform is self-elevating, with three 200-ft. legs enabling it to operate in water nearly 150-ft. deep.

Mobil will be operator on the offshore concession that it holds jointly with SPAEF, but Offshore expects to remain in the area for approximately a year and a half, and during that time will drill on acreage held solely by SPAEF as well as on the Mobil-SPAEF acreage.

SPAEF produces some 16,000 bpd from onshore fields in the area.

The offshore wildcat will be the first offshore test for the franc area.

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Iraq

Vessels Complete 80-Day, 10,543-Nautical-Mile Trip

A flotilla of work barges which left Houston February 16, has arrived in the Arabian Gulf after an 80-day, 10,543 nautical mile voyage.

The Dutch tug **Elbe** came from Rotterdam to pick up the tow. Largest of the barges is the **Minor,** Brown & Root's giant 350-ft. pipe-laying vessel, on which 154 men will live while laying a marine pipe line for Basrah Petroleum Company. Following behind the **Minor** was the **M-209,** loaded with equipment including two smaller barges.

A Brown & Root captain and six crewmen rode the lay barge on the long trip. The worst weather encountered was in the Gulf of Mexico between here and Miami, where a cold front kicked up 20-ft. seas.

Route of the tow was from Brown & Root's terminal on Green's Bayou to Gulfport, Mississippi. There two smaller tugs kept their rendezvous with the **Elbe,** which carried the tow to the Straits of Gibraltar. There the tow was picked up by the tug **Mississippi.** From there the route was through the Mediterranean, the Suez Canal, the Red Sea, to the head of the Arabian Gulf.

Lake Maracaibo

Creole Planning Waterflood In Its LL-5 Lake Reservoir

Creole Petroleum Company is planning Lake Maracaibo's first big waterflood.

Both gas and water will be used to halt pressure decline in the company's huge LL-5 reservoir in the lake. On the lower edge of the field, Creole will pump roughly 300,000 bpd of water into the zone through eight injection wells. Gas—at the rate of 250,000 mcf daily is being injected at the upper end of the field into the gas cap.

Involved is some 25,000 acres which the company estimates orginally held 4.5 billion bbls. of oil. The waterflood is expected to add some 170 million bbls. to the amount of oil recovered.

Louisiana

Gulf Sets Drilling Record Off Coast Of Louisiana

A Kerr-McGee rig working for Gulf Oil Corporation off the coast of Louisiana has drilled to a depth

of 10,000-ft. in world-record time.

Kerr-McGee's Rig 47 drilled the 10,000-ft. in 2.14 days. Average rate of penetration was 3-ft. per minute, including time required for pulling and rerunning drill pipe to change bits.

Also, a record 7,518-ft., nearly a mile-and-a-half of hole, was drilled in the first 24 hours. Drilling was supervised by Gulf engineers and utilized advanced techniques based on research by that company.

The well is Gulf's No. 25, Block 21 Offshore Timbalier Bay field, projected to 11,600-ft.

Best previous time for drilling to 10,000-ft. was 3.4 days, also accomplished by a rig drilling for Gulf in the same area.

The fast drilling times are the result of an intensive program initiated by Gulf in the late 1950's to find ways of speeding up drilling and thus reducing costs, the company said.

TGT To Lay Submarine Gathering Line In Gulf

Tennessee Gas Transmission Corporation will lay an 8.3 mile submarine gathering line in the Gulf of Mexico off the coast of Louisiana. The 20-in. line will run from Block 68 to Block 71 in the West Cameron Area, and will handle some 50,000 mcf daily from offshore wells in the area.

Cost of the line will be in excess of $1.5 million.

Gulf Oil Completes Wildcat, Triple Producer In Louisiana

Two significant oil producers—a new field wildcat and a triple-producing development well—have been completed by Gulf Oil Corporation in Louisiana.

The successful wildcat is the No. 1 Mark Delesdernier, located two miles east of the West Bay field. Perforated at the interval 8,670-81 ft., it flowed 346 bpd of 37-degree gravity oil per day through a 10/64-in. choke.

Gulf's No. 24, Block 21 offshore Timbalier Bay field, was completed as a triple producer with a potential of 930 bpd. Four productive sands in a new fault block were logged for 140 net feet of pay. Perforations were at the intervals 10,623-36-ft., 10,495-525-ft., and 10,178-90-ft. Gravity ranged from 26.2 to 27.3 degrees.

Neutral Zone

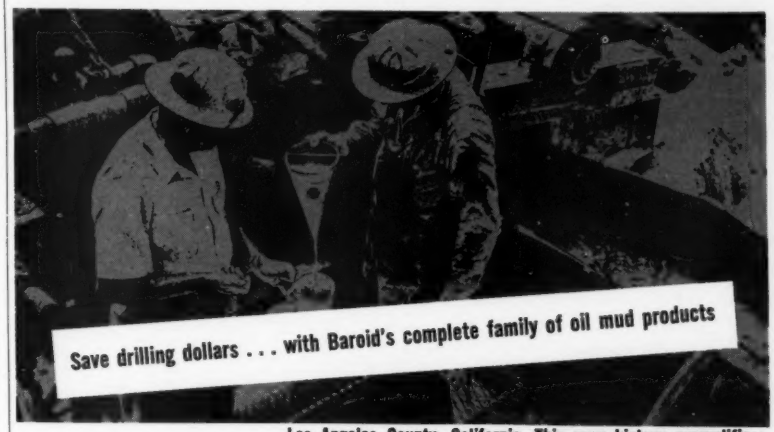
Second Blowout And Fire Reported In Khafi Field

The Japanese-owned Arabian Oil Company has reported destruction of a platform and derrick in northern Khafi oil field, in the Persian Gulf, by a blowout and fire.

A tender belonging to Southeastern Drilling Company of New Orleans and Dallas apparently escaped without damage, when it was cut loose from the burning platform.

The blowout may have been caused by the same shallow high pressure gas sand that blew out on the very first well that Arabian drilled in the area, and very nearly caused the loss of the mobile drilling unit C. E. Thornton, owned by Reading & Bates of Tulsa, Okla. The unit was heavily damaged before the wild well was brought under control, and Arabian Oil Company's initial efforts to bring in a successful offshore field suffered a severe setback.

Then—in probably one of the most phenomenal success stories of modern times—the company brought in 13 straight producers.



Baroid Field Report: **Los Angeles County, California. This case history exemplifies the application of one type of a Baroid Oil Mud used to solve this particular problem.**

Baroid Oil Mud solves water-sensitive pay sand problem

A Baroid Oil Mud containing INVERMUL*, PETROTONE** and DURATONE** was recently used successfully to prevent water damage to productive oil sands in the Inglewood Field, Los Angeles County, California.

The water-sensitive formations and high bottom-hole temperatures encountered had previously prevented completing below 7,500 feet without water damage. These difficulties were attributed to formation damage by the filtrate from conventional water muds.

The well was spudded and 16" casing set at 550 feet. An AQUAGEL*-caustic soda-CARBONOX* emulsion mud was used to drill to 3,000 feet—10¾" casting net. The AQUAGEL-CARBONOX mud was treated with TRIMULSO* and used to drill to 7,400 feet. At 7,400 feet the oil-in-water-emulsion mud was displaced with a pre-mixed Baroid Oil Mud containing INVERMUL and DURATONE. No difficulty was encountered during the displacement. Water mud incorporated into the oil mud did not alter its flow properties.

PETROTONE (2 lb/bbl) was used to treat this oil mud to eliminate the possibility of any settling of BAROID* at the high bottom-hole temperature.

DURATONE controlled filtration at 0.0 to 0.5 ml, all oil. This control insured against filtrate damage to formations.

Baroid Oil Muds, product of Baroid research and engineering, saves your drilling dollars and keeps your drilling program on schedule. For more information on the unique properties and flexibility of Baroid Oil Muds write for Product Data Sheets.

*INVERMUL, emulsifier; AQUAGEL, bentonite; BAROID, weight material; CARBONOX, thinner; TRIMULSO, surfactant; are Registered Trademarks of Baroid Division National Lead Company.
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Qatar

Oil Strike At Id-El-Shargi By "Seashell" Reported

The authoritative **Petroleum Times,** published in London, reports that Shell Company of Qatar has made an oil strike at Id-El-Shargi, in the Persian Gulf some 50 miles off Qatar, with a third well drilled by the mobile unit **Seashell.**

The **Seashell** was contructed in Holland and towed to the Persian Gulf to serve Shell's offshore drilling program. No depth of the well, or quantity of production, has been reported for the Id-El-Shargi test.

Trinidad

Offshore Oil Has Ups, Downs Off Empire Island

During 1960, improved drilling techniques enabled Trinidad Petroleum Development Company Ltd. to drill a record footage, which in turn resulted in an increase in the number of wells completed. This was one of the factors responsible for a modest increase in production to 6,295,-697 bbls. for the year.

However, both offshore and onshore, the company faces problems.

In the Gulf of Paria, test well NM-2 was brought in at the relatively high rate of 1,000 bpd, but showed a rapid decline so that it is still uncertain whether the reservoir being tested will prove a commercial producer. Three wells are planned for the same area during the latter half of 1961, with a further well off the south coast.

A drilling barge will be used for this work, which is expected to involve expenditure of approximately a million dollars by the company this year.

On land, results of exploratory and appraisal drilling in 1960 were reasonably satisfactory, especially at Moruga. However, proved areas are being drilled up at a rate somewhat faster than areas are being established, and it is probable that present production from the company's land acreage will prove to be at its peak.

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Tulsa-LA Jet Link

"Blackgold" can still gush from the top of a derrick in Tulsa, if the occasion demands and a pretty girl presses the right switch.

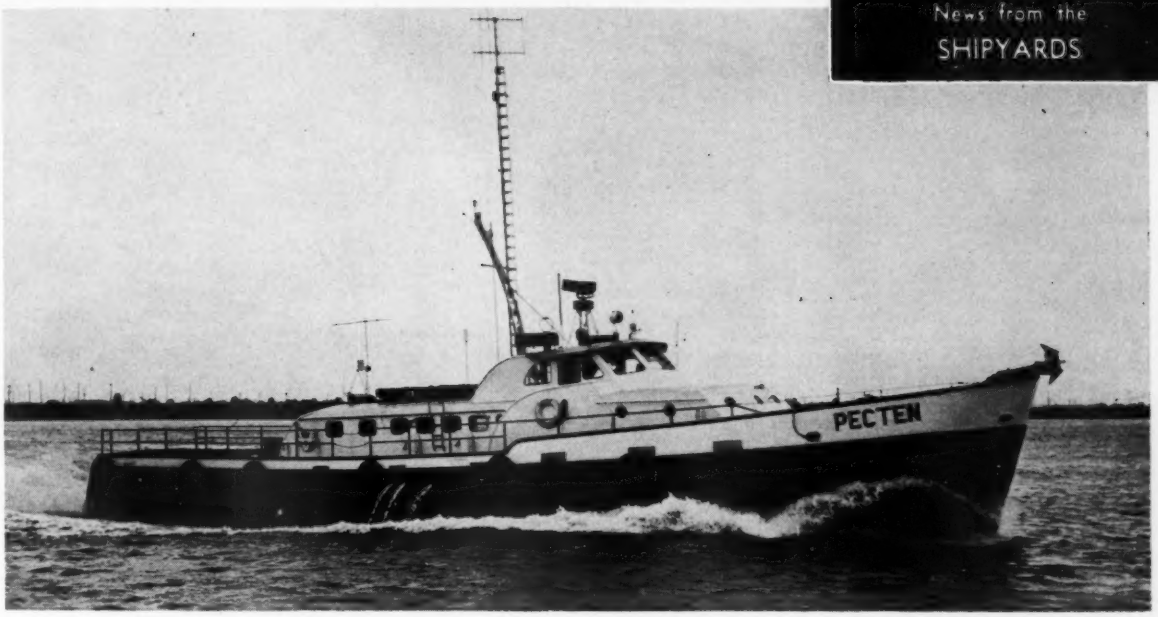
Such an occasion did arise recently, when American Airlines inaugurated pure jet service between Tulsa and Los Angeles—and the pretty girl, Miss LaWanda Bury, a beauty winner, was on hand to bring in the gusher for an admiring crowd.

For the christening with oil of an American 707 jet flagship built by Boeing, Tulsa's Lee C. Moore Corporation, builder of drilling structures for over 50 years, provided a 6-ft. scale model of a Moore derrick for Miss Bury's convenience.

The derrick was from the fine collection of scale models which Lee C. Moore has built to demonstrate the engineering-operating principles of its equipment. The models have been furnished for use of the oil industry in many countries where Moore equipment drills for oil.

On this occasion, there were two fine models on display—the derrick and Miss Bury. When LaWanda turned a valve, a stream of oil (or at least a stream that appeared to be oil) gushed upward through the derrick top and played upon the silvery side of the 600-plus-mph Astrojet.

American now has daily jet flights from Tulsa to Los Angeles, and Los Angeles to Tulsa. Both flights includes stops at Oklahoma City and Dallas.



For Caspary-Wendell . . .

A Luxurious New 96-Foot Cruiser

By J. L. BAUGHMAN
Special Correspondent

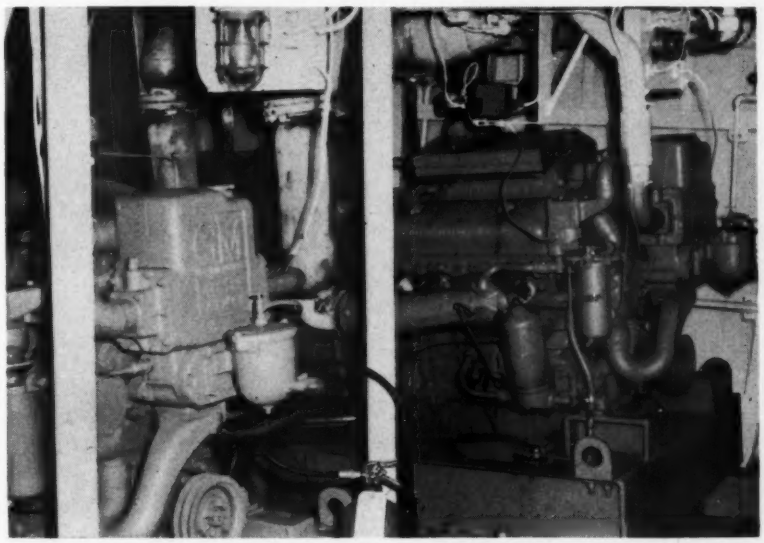
The **Pecten**, a new and luxurious 96-ft. cruiser, has been added to the Caspary-Wendell Work Boat fleet to meet demands for a fast, comfortable and seaworthy inspection vessel capable of carrying executive personnel and supplies to offshore installations in a hurry.

Caspary-Wendell, specialists in marine transportation with headquarters in Rockport, Texas, has designed and operates an all-steel fleet of fast offshore vessels, and were pioneers in developing the hull type used in this newest addition to the boats bearing the company's sea horse insignia on a black and yellow flag.

Basically the **Pecten**—now in the service of a major oil company—follows a design much like that of the 95-ft. cutters used by the U. S. Coast Guard featuring speed, maneuverability, carrying capacity and ease of cargo handling.

The first Caspary-Wendell boats of this type were the **Whirlaway, Count Fleet, Gallant Man,** and **Chevron.** However, the **Pecten** is a little larger than her predecessors, with more beam giving her greater carrying capacity, and considerably greater power, for faster and easier handling.

Accommodations . . . Completely air-conditioned and with central heat-



MAIN ENGINES of the Pecten are three GM 8VA tandems, supplied by George Engine Company of Harvey, La.

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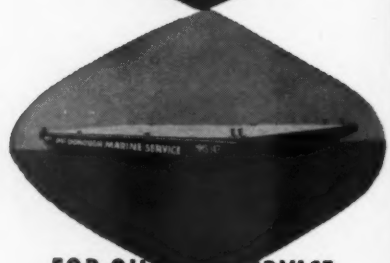

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OWNERS OF THE "PECTEN" are Delo H. Caspary, left, and Jerry Wendell, in front of their new vessel at Galveston docks.

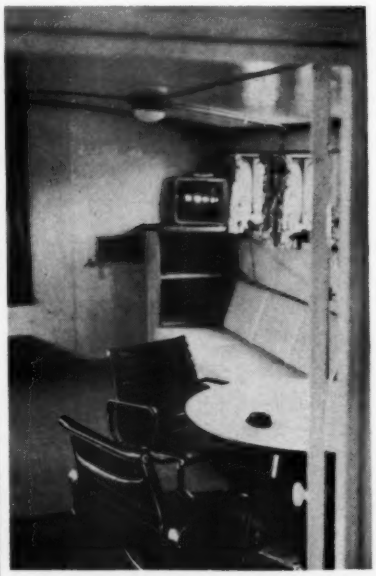
ing, the main cabin and crews' quarters are as luxurious as those on any fine yacht, with comfortable berths, chairs and divans, and even a television set. The galley is all-electric.

Auxiliaries . . . The **Pecten** is equipped with automatic pilot, radar, Loran, radio and radio-direction finder, and Sperry master gyro-compass. The forward winch is variable, delivering two tons of pull at slow speed, and a ton at high speed. Anchors are 350-ton Danforths.

Power . . . The **Pecten's** three tandem 8VA GM diesels were supplied by George Engine Company of Harvey, La. These have a maximum speed of 2240 rpm under no load, and work through 3:1 reduction gears.

Two right-hand and one left-hand propellers are 44" x 44". Port and starboard 225/450 volt generators powered by GM diesels turning up a maximum of 1890 rpm with no load, deliver 20 KW's at 1200. Two 3" x 2½" air compressors are driven by 2 hp electric motors. Bilge, ballast and fire pumps are also powered by 2 hp electric motors.

The big engine room switchboard was manufactured by McIntosh Marine Service of Beaumont, Texas.



LOOKING FORWARD in the main cabin. The Pecten is outfitted on a par with the finest yacht afloat.

CAPTAIN BILL LASSITER in the Pecten wheelhouse. The vessel can also be controlled from the flying bridge.

TRANS AIR LINES now schedules three flights daily from Moisant Airport to marine oil centers along the Louisiana Gulf Coast. The company provides ground transportation at such locations as Houma (above), to facilitate rapid movement of passengers and freight.

Trans Air Serves Louisiana

Schedules three daily flights to Harvey, Venice-Buras, Grand Isle-Leeville, Houma

Of special interest to the offshore industry is the announcement by Trans Air Lines of a new concept in point to point air transit.

In order to serve the growing Louisiana Gulf Coast area, Trans Air offers three scheduled flights daily from Moisant Airport in New Orleans to Harvey, Venice-Buras, Grand Isle-Leeville, and Houma.

Dick Barber, sales director of Trans Air, stated that freight and passenger service was being made available immediately in these areas not heretofore served by adequate public transportation.

As an added customer service, Barber said, Trans Air vehicles will provide ground transportation to facilitate rapid movement of passengers and freight over the new routes.

The three daily Trans Air flights from Moisant Airport, Barber added, are the initial segments of Trans Air plans to establish air routes serving the entire state of Louisiana.

The initial service coincides, in particular, with the needs of the marine oil industry both offshore and inshore in Louisiana.

Bull To Manage Milwhite's Louisiana-Mississippi Sales

Milwhite Mud Sales Company has announced the appointment of Joe W. Bull as sales manager of their Louisiana-Mississippi division. He will headquarter in New Orleans, Louisiana.

Bull joined Milwhite as an engineer in 1953. He has held sales positions in Fort Worth, Dallas and Houston. Most recently he was sales manager for Milwhite's Canadian operations in Calgary, Canada.

Bull is a native of Texas and a graduate of Southern Methodist University in Dallas.

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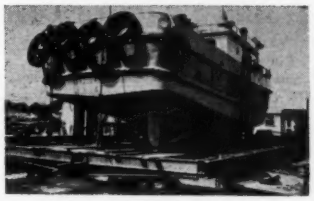

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Shell Appoints Manager, Crude Oil And Volatiles

F. F. Deaver has been appointed to the newly created position of manager, crude oil and volatile supply, Houston, it has been announced by D. B. Hodges, vice president of Shell Oil Company's Transportation and Supplies.

Reporting to Deaver will be G. T. Tennison, manager of volatiles supply, and J. K. Moore, who succeeds Deaver as manager, crude oil supply.

Deaver joined Shell as a sample boy at Shell's old Arkansas City, Kansas, refinery in 1927. He joined the transportation and supplies organization in 1941, becoming assistant manager, products supply, in

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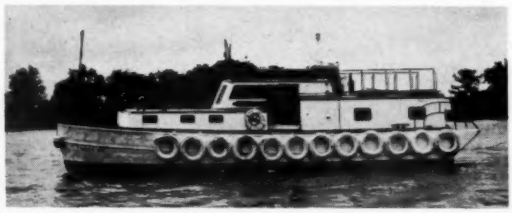

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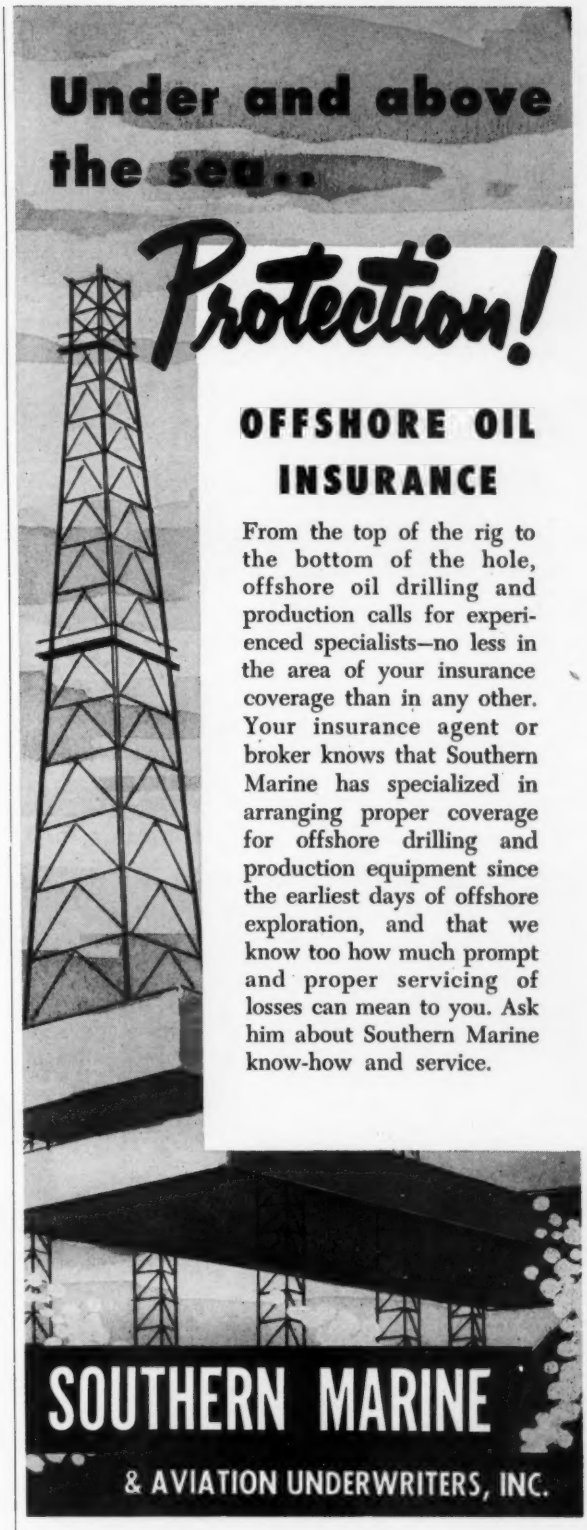
Mobile Units

OWNER	NAME	WATER DEPTH	PRESENT STATUS
Barge Facilities, Inc. Twin-hull submersible 217' x 100'	S-66	100'	Moving to Block 208, Ship Shoal Area, for Calco
Barnwell Offshore, Inc. Self-elevating 176' x 176' x 152' with three 175' legs	"Mister Cap"	to 125'	Drilling for CATC, Block 144, Ship Shoal Area, Well No. 1
Barnwell Offshore, Inc.	Rig No. 2		Moved onshore to work-over land wells temporarily.
Blue Water Drilling Corp. Submersible	Rig No. 1	60'	Drilling for Shell Oil Co., Block 139, Ship Shoal Area
The California Company Submersible 11' x 90' x 156' with four 3' x 10' x 35' pontoons	S-45	25'	Ship Shoal Area, 107
The California Company Submersible 12' x 90' x 190', with four 4' x 24' x 50' pontoons	S-55	45'	Bay Marchand, La., Noble Drilling Co.
Continental Marine Exploration Co. Submersible 230' x 99' with 54' between fixed hulls	"M & H Drilling Platform No. 12"	to 30'	Now being dismantled to be retired
Coral Drilling Company Submersible 180' x 151' x 84' with four pontoons	"Mr. Arthur"	to 70'	Drilling for Tennessee Gas & Oil Co., Block 17, West Cameron Area
Deepwater Exploration Co. Self-elevating overall 121' x 118	"Deepwater No. 2"		Sold for scrap
Delta Marine Drilling Co. Submersible	"Chris Zeppa"	to 35'	Drilling for British American Oil Co., Block 117, West Cameron Area
Dixilyn Corp. Self-elevating 194' x 152' overall. Three 175' legs	"Julie Ann"	to 105'	Drilling for Pan American Petroleum Corp., Block 33, South Marsh Island Area
Global Marine Exploration Co. Floating vessel	Cuss I		Drilling off Santa Barbara
Global Marine Exploration Co. Floating vessel	SM-1		Idle
Global Marine Exploration Co. Floating vessel	Submarex		Idle—Lake Michigan
Gulf Marine Drilling, Inc. Submersible	Rig No. 1	35'	Drilling for Gulf Oil Corp., Block 24, West Delta, Well No. 1
Hyperion Constructors Self-elevating	"George F. Ferris"	200'	Los Angeles, Calif., Stacked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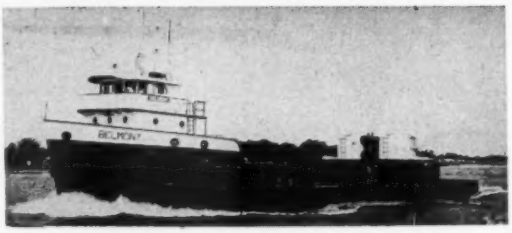

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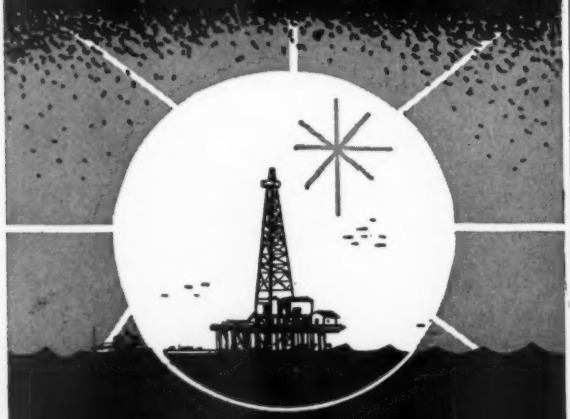

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OWNER	NAME	WATER DEPTH	PRESENT STATUS
Kerr-McGee Oil Ind., Inc. Submersible 13' x 54' x 160' with two 13' x 14' x 110' pontoons	Rig 40	to 22'	Drilling for Kerr-McGee, et al, Block 28, Ship Shoal Area
Kerr-McGee Oil Ind., Inc. Submersible 13½' x 72' x 140' with two 13½' x 13½' x 140' pontoons	Rig 44	to 40'	Drilling for Pure Oil Co., Block 32, Eugene Island Area
Kerr-McGee Oil Ind., Inc. Submersible 142' x 69' x 13'6", with two 10' x 11' x 146' pontoons	Rig 45		Drilling for Superior Oil Co., Block 71, Vermilion Area
Kerr-McGee Oil Ind., Inc. Submersible	Rig 46	to 70'	Drilling for Forest Oil Corp., Block 129 Vermilion Area
Kerr-McGee Oil Ind., Inc. Submersible	Rig 47	to 70'	Corp., Block 129, Vermilion Drilling for Gulf Oil Corp., Block 21, South Tambalier
Long Point Gas & Oil Ltd.	Translake No. 1	35'	Drilling for Self, Lake Erie
Long Point Gas & Oil Ltd.	Translake No. 2	40'	Drilling for Self, Lake Erie
Louisiana-Delta Offshore Corp. Submersible 180' x 151' x 12'	Drill Barge Louisiana	to 65'	Drilling for Humble Oil Co., Grand Isle Area
Louisiana-Delta Offshore Corp. Submersible 156' x 90'	Drill Barge Delta	to 25'	Main Pass Area
Mobil Oil Co.	Rig 52	24'	Sold
Midcon Oil & Gas Co., Ltd. Cable tool	Midcon No. 1	90'	Drilling for self, Lake Erie
Movible Offshore Co. Submersible 201' x 211' x 110'	"Movible No. 2"	to 80'	Drilling for Shell Oil Co. Block 27, South Pass Area
Movible Offshore Co. Submersible 200' x 146' x 67'	"Movible No. 3"	to 45'	Drilling for Shell Oil Co., Block 27, South Pass Area
Movible Offshore Co. Self-Propelled Drilling Tender	Rig No. 4		Drilling for Mobil Oil Co., Block 131, Vermilion Area
N. V. Nederlandse Ardolie	"Triton"		Outfitting in Cardiff, Wales for location in North Sea
Ocean Drilling & Exploration Company Submersible 200' x 300' x 98'	"El Dorado"	to 70'	Drilling for Odeco et al, Block 129, Eugene Island Area
Ocean Drilling & Exploration Company Submersible 132' x 220' x 58'	"Mr. Charlie"	40'	Drilling for Odeco, et al, Block 93, Ship Shoal Area
Ocean Drilling & Exploration Company Submersible 120' x 180' x 49'	"John Hayward"	30'	Drilling for Odeco, et al, Block 89, Eugene Island Area

OWNER	NAME	WATER DEPTH	PRESENT STATUS
Ocean Drilling & Exploration Company Submersible 200′ x 300′ x 93′	"Margaret"	to 60′	Drilling for Shell Oil Co., Block 27, South Pass Area
Ocean Drilling & Exploration Company Submersible 120′ x 180′ x 50′	"St. Louis"	30′	Drilling for Shell Oil Co., Block 100, Eugene Island Area
The Offshore Company Self-elevating 131½′ x 117′ x 220′ with fourteen 6′ dia. caissons	Mobile Unit No. 52	100′	Drilling for Humble Oil & Refining Co., Block 54, South Timbalier Area
The Offshore Company Submersible 12′ x 74′ x 200′ with four 6′ dia. caissons	Mobile Unit No. 53	35′	Drilling for Phillips Petroleum Co., Block 108, Eugene Island Area
The Offshore Company Self-elevating 200′ x 104′ x 15′ with eight 12′ dia. towers	Mobile Unit No. 54	100′	Drilling for Phillips Petroleum Co., Block 115, Vermilion Area.
The Offshore Company Self-elevating 200′ x 104′ x 15′ with eight 12′ dia. towers	Mobile Unit No. 55	100′	Drilling for Dominion Oil, Ltd., East Coast of Trinidad
The Offshore Company Self-elevating 200′ x 104′ x 15′ with eight 12′ dia. towers	Mobile Unit No. 56	100′	Leased to Pan-American International Persian Gulf
The Offshore Company Self-elevating 188′ x 106′ x 13′ with four 10′ dia. caissons	Mobile Unit No. 57	80′	Leased to Texaco-Trinidad Gulf of Paria
The Offshore Company Self-elevating 97½′ x 80′ x 12′ with three 6′ dia. caissons	Mobile Unit No. 58	100′	Drilling for Phillips Petroleum Co. in Caribbean off Coast of Belize.
Offshore International S.A. Self-elevating 200′ x 104′ with 8-12′ dia. towers	Offshore No. 56	126′	Drilling for Pan American Internahonal in Persian Gulf.
Penrod Drilling Company Submersible 196′ x 108′	Rig 50	35′	Drilling for Hunt Oil Co. Offshore Lafouche Parish
Penrod Drilling Company Submersible 150′ x 190′	Rig 51	to 60′	Drilling for Calco, Bay Marchand Area
Penrod Drilling Company Submersible 198′ x 174′	Rig 52	100′	Drilling for Union Producing Co. et al, Ship Shoal Area off Terrebone Parish
Place Gas & Oil Co., Ltd.	Barge 2		Drilling for Self, Lake Erie
Place Gas & Oil Co., Ltd.	Barge 3		Drilling for Self, Lake Erie
Reading & Bates Offshore Drilling Company Self-elevating	"C. E. Thornton"	to 110′	Drilling for Japanese Arabian Oil Co. in Persian Gulf
Reading & Bates Exploration Company Self-elevating	"Mr. Louie"	To 120′	Drilling for Union Oil of California, Block 184, Ship Shoal Area
Rimrock Tidelands, Inc. Submersible	"Rimtide"	35′	Drilling for Gulf Oil Corp. Lastare "PP" Lse Well No. 9, South Timbalier Bay Field
Sea Drilling Corp. Submersible	"Seadrill 2"	30′	Block 105, Eugene Island Area
Sea Drilling Corp. Submersible	"Seadrill 3"	30′	Block 25, Grand Isle Area
The Shell Co. of Qatar, Ltd.	Seashell	100′	Drilling for Shell off Qatar
Southeastern Drilling Corp. Submersible 11′ x 90′ x 156′ with four pontoons	Southeastern-45		Drilling for the California Co., Ship Shoal Block 107
Standard Oil Co. of Calif.	Western Explorer	200′	California, stacked

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OWNER	NAME	WATER DEPTH	PRESENT STATUS
Tidelands Drilling Co. Self-elevating Deck 258' x 104', pad 200' x 180' with four 10' dia. columns	"Mr. Gus II"	150'	Drilling for C.A.T.C., Block 71, West Delta Area
Union Producing Co. Submersible 160' x 190'	Barge A	to 70'	Drilling in Block 147, Eugene Island Area
Zapata Off-Shore Company Self-elevating. 194' x 152' overall. Three 145' legs	"Vinegaroon"	to 105'	Drilling off Galveston, Block 160
Zapata Off-Shore Company Self-elevating 20' x 80' x 140', with three 152' triangular legs	"Scorpion"	80'	Drilling in Block 860, Mustang Island Area
Zapata Off-Shore Co. Floating drill barge	"Nola 1"		Drilling off Campeche, Mexico
Zapata Off-Shore Co. Floating drill barge	"Nola 3"		Drilling in Block 385, off Galveston, Texas

Drilling Tenders

Gulf Oil Corporation Converted LST, 328' x 50'	"Eagle"		Rig stacked at Morgan City, Louisiana
An-Son Offshore Drilling Co.	"Carl B. Anderson"		Sold to Aramco. Preparing for shipment to Persian Gulf
The California Company Converted LST, 328' x 50'	S-21	25'	Bay Marchand, Louisiana, Noble Drilling Co.
The California Company Converted LST, 328' x 50'	S-22	49'	Bay Marchand, Louisiana Loffland Bros.
The California Company Converted LST, 328' x 50'	S-23		Mothballed
The California Company LST, 328' x 50'	S-24	48'	Bay Marchand, Louisiana, Noble Drilling Co.
The California Company LST, 328' x 50'	S-25	48'	Bay Marchand, Louisiana, Loffland Bros
The California Company LST, 328' x 50'	S-26	40'	Noble Drilling Co., Bay Marchand, La.
CATC Group New tender, 260' x 54'	"J. C. Craig"	86'	Grand Isle, Block 47
CATC Group New tender, 260' x 54'	"Carle Sharp"	50'	East Cameron, Block 48
CATC Group New tender, 260' x 54'	"Ernie Miller"	146'	West Delta, Block 71
CATC Group New tender, 260' x 54'	"Jack Cleverley"	94'	Eugene Island, Block 208
Deepwater Exploration Co. Converted LST, 328' x 50'	"Deepwater No. 1"		In shipyard for annual drydocking, overhaul and refurbishing
Delta Marine Drilling Co. Converted LST, 326' x 50'	"Joseph Zeppa"		Grand Isle Area, Block No. 16, Humble Oil & Refining Co.
Gulf Oil Corporation New tender	"Dolphin"		Completely placed in moth ball fleet at Orange, Tex., engines pickled, and rig stacked
Gulf Oil Corporation New tender, 272' x 60'	"Pelican"		Block 132, S. Timbalier area, self
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-1		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-2		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-3		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-4		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-5		At Orange, Texas for storage
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-6		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-7		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-8		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-9		Standing by

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OWNER	NAME	WATER DEPTH	PRESENT STATUS
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-10		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-11		Standing by
Humble Oil & Refining Co. Converted LST, 328' x 50'	ST-12		"Q" Platform in West Delta, Block 30 field
Kerr-McGee Oil Ind. Inc. New Tender, 250' x 50'	"Kermac II" Rig 49		Drilling for Kerr-McGee et al, Block 214, Ship Shoal Area
Kerr-McGee Oil Ind. Inc. New Tender, 250' x 50'	"Kermac III" Rig 48		Drilling for Gulf Oil Corp., Block 169, Ship Shoal
Kerr-McGee Oil Ind., Inc. Converted YF, 260' x 48'	"Frank Phillips" Rig 39		Idle
Magnolia Petroleum Co. Converted YF	"Gulf Coast Barge No. 2"		Out of Service
MCN Group Converted YF	MDT-1		Drilling in Block 119, Eugene Island Area, Well P-2 for self
MCN Group Converted YF	MDT-2		Out of Service
MCN Group Converted YF	MDT-3		Out of Service
MCN Group Converted YF	MDT-4		Out of Service
MCN Group Converted YF	MDT-7		Out of service
Pan American International Oil Company	Panintoil 1	143'	Drilling for self in Persian Gulf
Reading & Bates Offshore Drilling Company	"J. W. Bates"		Drilling in Persian Gulf for Japanese Arabian Oil Co.
Reading & Bates Offshore Drilling Company	"George M. Reading"		Drilling for Gulf Oil Corp., Block 48, South Marsh Island Area
Reading & Bates Exploration Drilling Company	"G. L. Temple"		Drilling for Tennessee Gas & Oil, Block 180A, West Cameron Area
Reading & Bates Offshore Drilling Corp.	"J. W. Nickle"		Drilling for Tennessee Gas & Oil Co., Block 180 A, West Cameron Area
Southeastern Drilling Corp. Converted YF	Rig 12 Barge 9		Persian Gulf for the Arabian Oil Co., Ltd.

Self-Contained Platforms

COMPANY	DESCRIPTION	YEAR BUILT	LOCATION	WATER DEPTH
CATC	110' x 146'	1957	Grand Isle, Block 48, Loffland Bros., Rig 46	
Freeport Sulphur Co.			Block 9, Grand Isle, Self	45'
Gulf Marine Drilling, Inc. Rig #2			Bayou Boeuf, awaiting location	
Gulf Oil Corporation	40' x 100'	1957	Rig Stacked at Morgan City, La.	
Humble Oil & Refg. Co. Rig #50	78' x 200'	1956	Block 16 Field, "L" Platform, 50' Grand Isle Area	
Humble Oil & Refg. Co. Rig #54		1958	"Q" Platform, West Delta Block 30 field	
Humble Oil & Refg. Co. Rig #55			"P" Platform, Grand Isle Block 16 field	
J. Ray McDermott			Block 33 West Cameron Area, Kerr McGee Oil Industries, Inc.	
Phillips Petroleum Co.	88'9" x 140'	1956	Block 191, Eugene Island Area, platform inactive	81'
The Pure Oil Co. Converted LST	328' x 50'	1958	Orange, Texas	
The Superior Oil Co.	96' x 22'		Block 168, West Cameron Area	

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The morning after they returned from the honeymoon, the erstwhile bachelor kissed his bride before going to the office and said, "Sleep as long as you like, dearest. Ito will take care of everything."

A few hours later she awoke to find Ito shaking her gently by the shoulder. "Time to get dressed and go home now, missy!"

The doctor completed his examination on a retired and aging oilman. Lowering his stethoscope, the doctor stared at the elderly oilman with disbelief.

"I've been practicing medicine for 18 years," he said finally, "and I've never heard of a patient with a complaint such as yours. Do you seriously mean to tell me that you're worried because your virility is too high?"

"That's right, Doc," sighed the old gent. "It's too high. It's all in my head."

Toolpusher: "You've been traveling around a long time. Why don't you settle down and take a wife?"

Roughneck: "That's a pretty good idea. I've been shopping around quite a bit, but I haven't decided whose wife to take."

Maybelle was at lunch when hold-up men hit the oil company office where she worked. The thugs had forced all the girls to remove their dresses and lie on the floor.

When Maybelle entered the room and witnessed the scene, she lost no time in taking off her clothes and joining the other girls on the floor.

"Turn over, Maybelle," said the girl on her right, "this is a robbery, not the office party."

"What would you do if you returned home and found a man in your room?" one spinster asked another.

"Give him forty-eight hours to get out," was the reply.

New hand on drilling tender: "Listen, roughneck, if the cap'n ever heard you calling that deck a floor, he'd throw you right out one of them little round windows!"

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first true two-pump cementer has independent mechanical cement mixer

Until now, "two pump" cementers have had only one pump available to pump and displace slurry while cement was being mixed. The second pump was needed for mixing.

The new Dowell double-pump cementing unit has changed that. It features an *independent mechanical cement mixer* which does not depend on either of the two triplex pumps for operation. This mixer is driven by either one or both of two auxiliary hydraulic pumps — one mounted on each diesel engine. An additional pump supplies water to the mechanical blender. Thus, both high-pressure triplex pumps are free to pump and displace slurry during the entire job — from start to finish.

These pumps can be used together or independently. During a squeeze job, for example, the mechanical mixer can blend cement, water and admixtures while one pump is pumping and displacing slurry and the second pump is holding pressure on the casing. The triplex pumps can be operated at the same rate or at different rates. They also can be started and stopped together or independently, an important advantage when cementing multiple strings of tubing.

This truly double-pump system, with its "Controlled Slurry" mechanical mixer . . . the Densitometer, used to control slurry densities and provide an accurate, permanent record of slurry weights . . . the Dowell air-operated bulk cement transport, which permits any number of transports to be unloaded through a single surge hopper . . . and experienced Dowell cementing personnel are your assurance of first-class cementing by Dowell. Dowell, Tulsa 1, Oklahoma.

SERVICES FOR THE OIL INDUSTRY DOWELL

DIVISION OF THE DOW CHEMICAL COMPANY

Clyde Derricks and Hoists pass all tests for offshore drilling rig operations!

Closeup of one of the landings for the tender from which two Clyde Hoists and Derricks quickly and easily handle needed supplies.

Oil exploration is a costly proposition . . . more so when the operation is off-shore and all materials and supplies have to be hoisted onto the drilling platform. Delays or breakdowns are intolerable. Idle men and machines could pyramid losses into an astronomical figure. Material handling equipment must be dependable, fast, safe . . . operate around the clock with a minimum of maintenance. That's why Clyde Equipment was selected for this ultra-modern rig.

Clyde Derricks with Clyde Hoists have been the choice for many similar rigs. The owners knew that Clyde Equipment has been performance-tested in hundreds of installations, that savings in time and money would be made by using Clydes.

Why don't you look into the improvements Clyde deck and dock material handling equipment can make in your costs and work schedules?

CLYDE

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Established 1899

CLYDE IRON WORKS, INC.

DULUTH 1, MINNESOTA

HOISTS · DERRICKS · WHIRLEYS · BUILDERS TOWERS · UNLOADERS · CAR PULLERS · ROLLERS